ADVISORY COMMITTEE MEETING

BEFORE THE

CALIFORNIA ENERGY RESOURCES CONSERVATION

AND DEVELOPMENT COMMISSION

In the Matter of:	)	
	)	
Implementation of Alternative	)	Docket No.
and Renewable Fuel and	)	08-ALT-1
Vehicle Technology Program	)	
_____	)	

CALIFORNIA ENERGY COMMISSION

HEARING ROOM A

1516 NINTH STREET

SACRAMENTO, CALIFORNIA

MONDAY, APRIL 6, 2009

9:00 A.M.

Reported by:
John Cota
Contract Number: 150-07-001

COMMISSIONERS PRESENT

James D. Boyd, Vice Chair and Presiding Member

Karen Douglas, Chairman and Associate Member

ADVISORS PRESENT

Susan Brown, Advisor to Commissioner Boyd

STAFF PRESENT

Aleecia Macias

Jim McKinney

Michael Smith

AB 118 ADVISORY COMMITTEE MEMBERS PRESENT

Tom Cackette, represented by Jack Kitowski, California Environmental Protection Agency, Air Resources Board

Will Coleman, Mohr Davidow Ventures

Peter Cooper, California Labor Federation

Carla Din, Apollo Alliance (via telephone)

Daniel Emmett, Energy Independence Now Coalition

Bonnie Holmes-Gen, American Lung Association of California

Jananne Sharpless, Sharpless Consulting

John Shears, Center for Energy Efficiency and Renewable Technologies (via telephone)

Richard Shedd, Department of General Services

ALSO PRESENT

Richard Lyon, CyberTran International Inc.

Terry L. Karges, Roush Performance Products

Matt Miyasato, PhD, South Coast Air Quality Management District

Todd Campbell, Clean Energy

Greg Shipley, Biomass Ethanol Ltd.

Suzanne Seivright, Coachella Valley Region Clean Cities and Valley Power System, Inc.

Bonnie Scott, Global Cooling Solutions, Inc.

Chuck White, Waste Management

David Nickel, Caterpillar (via telephone)

John Boesel, CALSTART

Pete Price, California Natural Gas Vehicle Coalition

Stephen Kaffka, PhD, University of California, Davis, the California Biomass Collaborative

Bob Riopel, Recreational Boaters of California

Tom Koehler, Pacific Ethanol, Inc.

Lesley Garland, Western Propane Gas Association

Derald Andrews, American West Bio Energy

Jon Van Bogart, Clean Fuel USA

Tom Fulks, MightyComm
representing Daimler Fuel Cell Program

Chris Casado, Cal Produce Sales and CP Biofuels

John Mandella, Alternative PowerTrain Technologies and Brilliance AutoCam Automotive Group

ALSO PRESENT

Catherine Dunwoody, California Fuel Cell Partnership

Danielle Fugere, Friends of the Earth

Richard Schorske, Marin Climate and Energy Partnership

Felix Oduyemi, California Electric Transportation Coalition

Jeanne Trombley, Plug In America

Felix Kramer, California Cars Initiative (via telephone)

Fred Wellons, California Biodiesel Alliance (via telephone)

Dan Chad (via telephone)

I N D E X

I N D E X

P R O C E E D I N G S

9:20 a.m.

PRESIDING MEMBER BOYD: Good morning, ladies and gentlemen. I am sorry for the delay. This is Jim Boyd, Chairman of the Transportation Committee and with me is Chairman of the Commission, Karen Douglas.

For those of you on the phone who didn't figure it out, we have had a fairly long technical delay. We are going to go ahead and start. I am not sure all the delays have been fixed. We have monitors here in the room that don't work, we were getting pretty serious feedback and hearing a lot of noise on the speaker system here.

I hope you all can, can hear this. We were having a 30 second delay between when we spoke here and when people I think heard it and another 30 seconds to get the message back to us. Maybe we have drifted back towards the mother ship here and there won't be a long transmission delay, I'm not sure.

In any event I want to welcome everybody to this Advisory Committee meeting for the Alternative Renewable Fuels and Vehicle Technology Program, affectionately known as AB 118. And I

hope the technical delays here today don't bode anything for the, for the future of this program.

I think the first thing we should do is ask the Advisory Committee members to introduce themselves if they would. First we'll go around the table. Bonnie, why don't I start with you and then we'll ask the folks on the phone.

MS. HOLMES-GEN: Okay. I'm Bonnie Holmes-Gen, I'm senior policy director with the American Lung Association of California.

MS. SHARPLESS: And I'm Jan Sharpless, a former Commissioner with the Energy Commission.

MR. KITOWSKI: Jack Kitowski, chief of on-road controls at the Air Resources Board, representing Tom Cackette.

MR. COOPER: I am Peter Cooper with the California Labor Federation's workforce and economic development program.

ADVISOR BROWN: I'm Susan Brown, I am Commissioner Boyd's advisor.

MR. EMMETT: Daniel Emmett, Energy Independence Now Coalition, executive director.

MR. COLEMAN: Will Coleman with Mohr Davidow Ventures.

MR. SHEDD: And Richard Shedd with the

Department of General Services.

PRESIDING MEMBER BOYD: Okay, folks on the phone with the Advisory Committee please introduce yourselves.

MS. DIN: Hi, Carla Din with the Apollo Alliance.

MR. MATIERA: James Matiera with Arcon Appliances (phonetic names).

MR. SHEARS: John Shears with the Center for Energy Efficiency and Renewable Technologies.

PRESIDING MEMBER BOYD: John, you are going to have to speak up next time, we just barely heard you.

THE REPORTER: We didn't pick that you, Commissioner.

PRESIDING MEMBER BOYD: All right. Would you say it again, John. It didn't pick up at all with the court reporter. Although this isn't court.

MR. SHEARS: John Shears with the Center for Energy Efficiency and Renewable Technologies.

PRESIDING MEMBER BOYD: Thanks John. I guess I'll presume that's all the members of the Advisory Committee. Again, thank you all for being here.

This has been a long, interesting process we have been engaged in. It's the first time in -- well it's the first time period for a process like this with regard to transportation dollars for this Commission, the best I can tell. And it's the first time in a long time the state has provided money to spend in the transportation and transportation fuels arena so it has been an interesting if not exciting process we have been engaged in.

And we look forward to completing the Investment Plan that is before us all today in time to spend money this year. And I say that both because we want to get this program launched just because we need it as a state. But more importantly, based on the times we suddenly and unfortunately find ourselves in, it is important to get money out the door, rare as it is, to spend on projects that might provide some form of economic relief to the folks of California. So we have more than one purpose, I will just say, with regard to getting this project started.

Commissioner Douglas, anything you would like to say before we turn it over to Mr. Smith?

ASSOCIATE MEMBER DOUGLAS: I think I

just want to be very brief and thank the Advisory Committee for being here or being on the phone. We are pleased to be rolling out the Committee Draft of the Investment Plan and looking forward to your feedback.

PRESIDING MEMBER BOYD: Mr. Smith.

MR. SMITH: Thank you very much. My name is Mike Smith. I am the deputy director for fuels and transportation here at the Energy Commission and I will be walking you through the revised Investment Plan, which is now the Committee's Revised Investment Plan.

But first I do need to convey the obligatory comments, housekeeping items. For those of you not familiar with this building the closest restrooms are located just outside the doors and to your left. There's a snack bar up on the second floor underneath the white awning.

And lastly, in the event of an emergency and the building needs to be evacuated, I would ask that you please follow our designated CEC employees. They will be the ones wearing the yellow hard hats. If we have to evacuate the building we can convene over at Roosevelt Park, which is across the intersection from the Energy

Commission. And please just proceed calmly and quickly and we will have further instructions once we get over there. Hopefully that won't be needed.

With that let me also say that we have got a number of people on the phone. We will mute all those folks on the phone except the Advisory Committee members until there is a public comment section and then everybody will be unmuted and able to participate in the conversation. So let me just get underway.

As I mentioned, the Revised Investment Plan, which was posted about ten days ago, the most important change in this from the previous version, which was posted back in December and which was the subject of the last Advisory Committee meeting in early January, is that this document is now a committee report.

And this is a pretty standard process here at the Energy Commission as a document makes its way toward the Energy Commission for approval. So this is the last version that we will revise and the Committee will then sponsor this as they take it up to the full Commission for approval.

There were a number of revisions made in

the document and these revisions were based on, of course, comments at the last Advisory Committee meeting, comments in the public docket, which has become a very rich and thick source of information.

We held four public workshops throughout the state in the month of February, two in Los Angeles, one in Fresno and one in San Jose. And in total there were more than 200 attendees at those workshops.

We have had numerous discussions with other state agencies and have listed the major ones here. We have been in discussions with other state and local agencies and numerous stakeholders.

And of course the contents of this plan that you will see today are based on conversations with the Transportation Committee and their recommendations for this document.

What we have done with the plan is focused mainly on the Funding Allocation section, which used to be called the Gap Analysis and it is now -- it has a new title, Funding Allocation.

We have tried to highlight the rationale and the compelling need for the incentives more

strongly in this document.

We have provided a greater description, hopefully a clearer description, of how these fuels and technologies will transition to 2020. And those that are here today, why they will be needed and available in the 2020 and 2050 time frame to meet the climate change objectives

We have tried to do a better job in identifying barriers, the market conditions, the status of various technologies. We have looked very carefully at the timing of new vehicles that are entering the marketplace, their capabilities. We have tried to anticipate the demand for these vehicles and fuels and build this into our new funding allocation section.

And then lastly, we have changed the itemization in the recommendation section away from carbon-based categorizations to fuel and technology. So I think it, I think it's a little clearer, a little more straightforward.

And I am pleased to say that we are anticipating, we expect that this document will go before the Commission at its regularly scheduled Business Meeting on August 22 for approval.

PRESIDING MEMBER BOYD: April?

MR. SMITH: April 22. Holy cow.

(Laughter)

MR. SMITH: You know, given -- where's some wood?

PRESIDING MEMBER BOYD: Are you trying to tell us something, Mike?

MR. SMITH: Oh man, okay. Which means, to meet that deadline we will post this, we are going to attempt to post this document on April 8, which give us about two days from today to make any last changes before we post it.

And this chart basically summarizes the funding allocations in the plan. And I am not going to walk you through this. I just want you to see the different, the general sense of the categories and the dollar amounts.

If you will notice at the bottom we have one item that is categorized as non-GHG categories. And our editor is pleading with us to find a different title for that. But it is the items such as workforce training and other analytical support necessary for the program.

With that $27 million it brings the total allocation up to the $176 million that is the basis of this report.

And what I am going to do now is just quickly walk through each of these categories for you and highlight for you the recommendations that are contained in this committee document. And try to do that quickly so we can get to the discussion and question and answers, which is where I think everybody wants to head.

Under electric drive we made a number of recommendations in this report, starting with incentives for the retrofit of up to 350 Prius vehicles to plug-in hybrid configuration. And these will be primarily for public fleets.

We are cost-sharing, proposing to cost-share in the development of medium- and heavy-duty hybrid vehicles. And that will be an allocation of about 10 million.

We are providing support for non-road deployment at the ports in California and for the truck stop electrification opportunities.

We are looking carefully at the existing electric charging stations and proposing to upgrade those as well as identifying new electric charging sites in California for a total of about 6500 sites that we will either upgrade or install as new, new sites.

And we are allocating $9 million for manufacturing incentives to locate facilities in California to manufacture vehicles or vehicle components.

In hydrogen we have one recommendation and that is to provide $40 million for a minimum of 11 hydrogen fueling stations in California. And this will correspond with the expected roll-out of the fuel cell vehicles by the OEMs over the next couple of years and allow funding for the development of renewable hydrogen facilities as well. The 33 percent requirement is in statute as a result of SB 1505, I believe, about two years ago.

Ethanol. And before I begin this I do want to make one correction that I noticed there was a transcription error. The actual recommendations state that we will co-fund up to 20 feasibility studies for new ethanol plants using advanced biofuel technology or cellulosic technology.

And it will cost-share in new plants using these, using waste feed stocks in California. The transcription error is in the text of the report. It talks about providing

production incentives for existing plants. And that is an error that was not edited out. This is actually the correct recommendation.

And then lastly, we are proposing to fund, continue to fund E-85 fueling stations in California in alignment with the upwards of 400,000 FFVs and growing in California.

For renewable diesel, biodiesel. In the report we have used a new term called biomass-based diesel fuels, of which these comprise that category. We propose to cost-share in production plants using waste feedstocks in California and we propose to co-fund fuel terminal storage and blending facilities, primarily one in Northern California and one in Southern California.

Under natural gas. We are focused on the ports and we are focused on school districts and public fleets in funding medium- and heavy-duty vehicles.

We are proposing to provide rebates or incentives for upwards of up to 300 light-duty natural gas vehicles. Again, for use in public fleets.

We are also proposing to cost-share in natural gas fueling stations.

And looking toward the future, the development of biomethane production plants in California.

Propane. We have vehicle incentives for school buses and light duty vehicles. Again for public fleets.

And the non-GHG categories. There are several. The Commission is proposing to allocate $15 million for workforce incentives, workforce training programs. And we have identified three general areas that we would like to co-fund with other state agencies and the community colleges in developing these programs.

We have identified several areas in cooperation with the University of California where we want to continue research and develop our knowledge on sustainability.

We also have allocated a nominal amount of money, $1 million dollars for public outreach and education programs.

We have a technical assistance contract. Now these last couple I should probably explain a little, in a little bit of detail. We have a technical assistance contract proposal that we typically use to, for example to evaluate

proposals as they come in. This is the primary use for, for this contract. We here at the Commission can't cover every technology nor do we have knowledge of all the various technologies so we typically use tech support contracts to help secure outside expertise that we can use then to evaluate proposals. So that is one of the contracts that we are using here.

We have another contract that we are using, a small contract that we are using for general program support, helping us with a number of administrative and programmatic tasks.

And then lastly we are proposing a contract that will help develop a public outreach plan as well as developing metrics for the program that we can use to measure progress of the program and the success and effectiveness of the program in the coming years.

This second to the last bullet is actually an item that is allowed under AB 109 and it provides the Energy Commission with opportunities to do continuing, to continue to analyze the environmental performance, environmental aspects of fuels and technologies. We will continue to update and continue to inform

ourselves on the status of technologies and the status of the market. These are very important tools for us in order to stay, keep the program fresh and keep the program heading in the right direction.

And then lastly we are proposing interagency agreements with several state agencies to help develop standards and certifications for hydrogen, biodiesel and underground storage tanks.

And that is a very brief summary of what is in the plan. I would be happy to answer any questions that you may have.

PRESIDING MEMBER BOYD: Jananne.

MS. SHARPLESS: Yes. Mike, can you remind me again. This is looking at a two-year funding cycle but the Investment Plan really is looking at the far-reaching horizon. So if I am reading the report correctly the two-year funding horizon that you are talking about, it would be specifically with the allocations that you just reviewed?

MR. SMITH: That's correct.

MS. SHARPLESS: Is 2008-2009, current fiscal year?

MR. SMITH: The current fiscal year is

'08-09 for 75 million, we have that in our budget already. And then we have requested for '09-10 101 million. Which brings the total to 176 million.

MS. SHARPLESS: That's ambitious, isn't it? Given what you have laid out here, the processes by which you will implement the programs beside the projects. I am not saying that your investment priorities are not the right priorities, I am just gasping at the workload. And looking at the fact that you have had pedal to the metal and we are in April and you are going to be approving this plan before the Board with three months or four remaining in this fiscal year.

PRESIDING MEMBER BOYD: One.

MS. SHARPLESS: With staff cutbacks and all imagined is this doable?

PRESIDING MEMBER BOYD: Well there is an atypical provision in 118 that give us two years to encumber money. And therefore the staff, stretched as it is, is still hopeful that it can be done.

We kind of blur over the end of this fiscal year right on into the next year so we have really -- well, we have all of next fiscal year to

encumber this fiscal year's money. If need be we have all have the following fiscal year to encumber next fiscal year's money. We don't have any intention I believe of waiting that long but at least the money won't slide away from us due to the typical, annual fiscal year use or lose the money situation. And Mike, I don't know if you want to add anything else.

And also -- And I don't mean to speak for Mike but I find myself speaking for the Commission here. That the technical assistance provisions and the other support provisions that are, that are in this as yet to be titled category at the end are to help us do that.

MR. SMITH: The only, the only thing I would add, Commissioner, is that we have recognized that very tight time frame, even with the two year encumbrance. It is our goal, has been our goal from the beginning of this process to encumber as much or all of the first year's money by June 30.

We have been -- As we have been developing the plan, particularly as we have been moving towards the very later stages and their allocations have become more and more firm, the

recommendations, we have been working with other state agencies.

For example, the Air Resources Board we have been working very closely with in a potential interagency agreement for hydrogen funding. And we have been working with the Department of Food and Agriculture and the State Water Resources Control Board on some of the standards and certification work. So we are moving as quickly as we can in those areas that are most effectively undertaken by a state agency as the statute allows us to do.

We have also had a number of conversations with other strategic partners such as the South Coast Air Quality Management District, the ports and other public and private stakeholders and feel we have got a fairly good strategy to try and move this money as quickly as we can to expedited solicitations and other forms of agreements.

Will we encumber all the $75 million by June 30? I am not sure that we will but we will come very, very close. And we have the extra year.

MS. SHARPLESS: Okay. I'm looking at

some of the projects like helping to fund some of the plants, the biofuel plants and so forth. And whether or not there is private capital lined up to do that how long that actually takes in order to make sure that the projects that are being funded are projects that actually are economic.

The sense is that this is a good thing. But knowing the way government works and knowing how long that it takes to get to good projects. I'm just raising the question. I just -- You want to be successful, you want to make this a good Investment Plan. I am just wondering if there is enough built into the plan to recognize that the funding cycles are really pushing the envelope in terms of getting some of these things done and how you deal with that.

In other words, I would like this to be successful. I just worry about the economic conditions of things and all the stimulus packages and everything that is going on and whether or not you have some kind of idea how you are dealing with the fiscal environment with this type of project.

ASSOCIATE MEMBER DOUGLAS: There is some flexibility built into the plan. And I can't

point you to the page number but we have an explicit provision saying that to the extent that certain types of projects just aren't ready or we get better solicitations from one area over another we do retain the discretion to shift funding and try to compensate for that in terms of meeting our strategic goals if necessary in later years. And I think that is very important. I would say that the numbers we have for categories year may install a little bit of false precision given the reality of what we actually might get in solicitations in these different categories.

And the other big wild card, as you point out, is the federal stimulus. If we succeed in getting funding in certain areas, for example from federal funds, that would also impact allocations. So we have built in, explicitly provided for that discretion to adapt to conditions throughout the next year and a half or so.

PRESIDING MEMBER BOYD: Bonnie.

MS. HOLMES-GEN: Thank you. I first want to say that a great deal of work has been on this. I think that the priorities that are expressed in this draft are very good and indicate

a lot of input that the Advisory Committee has given and so I really appreciate that.

I appreciate that some of the categories, especially in the ultra-low carbon, that was the last go-around's categorization, but the hydrogen and electric, the total mix of funding those categories has gone up and I think that is a good improvement. With again the caveat that see what projects come in.

And I have a few questions and one of them is about funding incentives for deployment of vehicles. I notice that there's not proposed incentives for, funding incentives for deployment of new light duty vehicles and I know that there is money through the AQIP program.

But I wondered if you could just explain a little more why you think there is not a need to use any of this money for that purpose. It seems like there are some companies that are proposing, expecting, planning for a pretty quick ramp up in this area. I'm just wondering if it might make sense to set aside some additional funding for not just retrofit but also new vehicle deployment.

ASSOCIATE MEMBER DOUGLAS: In the electric vehicle category?

MS. HOLMES-GEN: In the electric vehicle category, yes.

PRESIDING MEMBER BOYD: Mike, did you want to make a comment? Otherwise Jack does.

MR. SMITH: Well this is an area that we have been working very closely with our colleagues over at the Air Resources Board in trying to, defining those areas where the statute does overlap between the two programs. This is, this is one of those areas.

And early on we made a strategic decision with ARB that they would, in this area they would provide the incentives for the vehicles and we would provide the incentives for the infrastructure, given that they cannot. Their statute does not allow them to institute, purchase or procure infrastructure.

So given that we felt it was important that our money be focused on that. Now having said that we also recognize that it is going to be hard to actually gauge the demand for the money that Air Resources Board has allocated through their AQIP program.

And as the Chairman mentioned a few minutes ago, there is flexibility within the

program that allows us to move money around as the Committee and Commission to move money from one category to another. And this is an area that we are going to work very closely with the Air Resources Board and keep a close eye on as the vehicles start to roll out in 2010 and be prepared to back them up with funding if that's warranted.

And keep in mind also that that time frame also brings us into the next round of the Investment Plan, which I am sure everybody shudders at the thought. But it does put us into the, right into the middle of the planning for the next Investment Plan and we will be in a much better position to gauge the demand for those vehicles and assess how much of these funds, if any, are needed to back up ARB's allocation. Jack, is there anything you wanted to add to that?

MR. KITOWSKI: I would mirror those comments. We have worked closely on this area. We support this area very strongly. The initial allocation of $5 million that the Air Resources Board put in its funding plan we believe is the appropriate amount given what we have heard. But both of us are interested in ensuring it is fully covered if, in fact, there are more vehicles than

there is initial, initial dollars.

MS. HOLMES-GEN: Can I just ask a follow-up? So I just would like to understand. Even though deployment, a new vehicle deployment and incentives is not specifically listed in the electric vehicle, light-duty, however it is stated category, electric drive category. Are you saying that there would be flexibility then to assist ARB and supplement the funding if that is needed? I am just trying to understand what you were saying.

ASSOCIATE MEMBER DOUGLAS: Yes, I think there would be flexibility to do that.

MR. SMITH: And just as a quick footnote to that. Our regulations do have that language built into the program so we can, we can, we do have that flexibility.

PRESIDING MEMBER BOYD: One of our concerns, Bonnie, is we would love nothing more than to help vehicles actually hit the road. We also in the early, in this first go-round were thinking we have got to get technologies. Finish researching, finish development and get them ready for the deployment stage.

So we don't know how many vehicles we will see, we and the Air Board, as Jack indicated.

We said well, this is our best guess at this point in time. We would like to lure as many vehicles onto the road as possible but they have got to be developed. In some of cases certify the technologies. So cross our fingers collectively.

Any other questions? Bonnie, you're on a roll here, go ahead.

MS. HOLMES-GEN: I guess another question. I wanted to ask about how air quality considerations are going to be handled, especially in regard to the biofuel facilities? And I think we need to see the development of advanced biofuels but there are a lot of questions about the technologies that will be employed and the air quality impacts and mitigation measures that will need to be used to address any impacts.

And, you know, this is kind of an emerging area. We are learning a lot of information in this area. And I am wanting to get a little bit of clarity as to how the Commission is going to work with the ARB to examine the air quality impacts of these projects and make sure that we are providing for review and mitigation of those impacts as we move forward.

PRESIDING MEMBER BOYD: Mike, do you

want to comment?

MR. SMITH: Sure. Part of this, one of the provisions in the statute, as you recall, requires the Air Resources Board to develop the air quality guidelines. The anti-backsliding guidelines as we have come to call them. Those guidelines set very clear thresholds against which we cannot, we cannot violate. We don't anticipate that we will be in that position but they do set that sort of, do no worse than, threshold.

Our goal, Bonnie, quite honestly, is to, is to develop those projects that go well beyond that. That push the envelope forward in terms of environmental performance of either the fuels that we fund, the technologies that we fund, or in the case that you are raising, the actual brick and mortar facilities that we might fund or help fund in producing these fuels.

Jim McKinney on our staff has been heading for some time now a sustainability working group. Part of his task is to develop the evaluation criteria that we will use in funding projects. And within our regulations we have some very clear sustainability goals and environmental performance objectives. Which he and his staff

are now working with the sustainability working group to basically change into, evolve into actual criteria that we will use in funding projects.

Jim, I'll invite you if you wanted to add anything to that or if that is a sufficient answer.

MR. McKINNEY: Jim McKinney, Energy Commission staff. Just to add a few things to what Mike Smith was saying. For the ARB's Low-Carbon Fuel Standard the initial statement of reasons has an environmental chapter that has taken a preliminary look at the number of biorefineries needed to meet some of the state's long-term goals. We look at that as a very solid data source.

And then as Mike Smith was saying, I just would like to add on April, so this Thursday, the sustainability working group is going to be meeting here in Hearing Room A at one o'clock. Where you can join us in helping to further track these evaluation criteria.

MS. HOLMES-GEN: And I just wanted to comment that I appreciate that and I appreciate the work that has been with the Low-Carbon Fuel Standard and we support the Low-Carbon Fuel

Standard moving forward. But we still, there still is not information on the air quality impacts of the specific facilities because they haven't been built yet. So, you know, there still is a gap of information that is needed here.

So I appreciate that we have the air quality guidelines and that is tremendously helpful in terms of new facilities. But even as we go forward and do some of these project feasibility studies it would be helpful to know that air quality would be one consideration in those, in those studies.

MR. KITOWSKI: If I could jump in. Your comment is well-placed. And if you will remember with the -- as you started, we don't know all of the answers right now. We don't know what the facilities are that are going to be proposing and the Low-Carbon Fuel Standard is not finalized. So there are uncertainties. And we knew that when we developed the air quality guidelines that were required by the legislation.

So the most important points we could emphasize were consistency with the Low-Carbon Fuel Standard and a transparent process. And that is what we intend to go through knowing that there

are uncertainties and how this will play out. We don't think the uncertainties are vague because as Mike said, these projects should go well beyond just anti-backsliding. They should be providing significant emission benefits.

So we think we are in a good place. But the procedures that we call for, consistency and transparency, will allow you to see how it unfolds as we go through. And, of course, I'm sure you will be commenting every step of the way.

MS. HOLMES-GEN: As long as I am here.

Yes. And I just wanted to comment that this is, this is emerging technology. Again, we need to pursue these advanced technologies, especially the cellulosic and waste-based technologies and I appreciate the focus on that in this document. But we do need to be very cautious in reviewing the air quality and public health impacts.

As we move forward with this program and with the Low-Carbon Fuel Standard we need to make sure that we have ample consideration of public health and how public health is being impacted by these new fuels and technologies. And make sure we have some checkpoints where we have review of

those public health impacts, both to local communities and statewide.

MS. SHARPLESS: I would just underscore what Bonnie said and recognize that the agencies themselves have a strong commitment to assure that they are not backsliding or they are not trading off. But given the recent political debate in the Legislature during the budget with tradeoffs between economic development and environmental regulations, I would just echo the concern that you be ever so diligent in pursuing those types of projects.

I think we have a lot of things going on here. We have credit problems in our financial systems that are going to impact these plants and uncertainty in any way will create additional problems for projects to get funded. So I recognize that this is going to be difficult. But I think that we on the side of the table for public health will continue to be here raising our voice strongly. Thank you.

PRESIDING MEMBER BOYD: Thanks, Jan.

MR. COOPER: This is Peter Cooper with the Labor Federation with a comment regarding the non-GHG. I don't know if you have considered the

term, complementary measures. That's one comment.

The other comment is regarding -- I want to say we appreciate the increased focus on workforce development, job creation, job training, given the state of our current economy. We also think it is appropriate, as the language states, to seek the advice of the Green Collar Jobs Council at the State Workforce Investment Board. Because the important organizations and people in the workforce development field, labor and management and business, are at that table.

One comment regarding that language though. It does say, consultation regarding where workforce training dollars should be placed. I think we should also seek the advice of the Green Collar Jobs Council regarding the quality of jobs created. This is a concern of ours as we see the creation of jobs where, you know, we might have somebody that has to have two or three jobs, they are traveling between jobs. Now that does no one any good. We want jobs that are family-sustaining wages and we want quality job training programs. So that was one suggestion regarding the language.

PRESIDING MEMBER BOYD: Thank you.

Mike, do you want to, do you want to

elaborate a little bit on the so far apparently extensive work we have done with all of the other bodies that are involved in workforce training.

MR. SMITH: I will. Let me touch on it and then I have staff here who have been working very closely with those agencies. But we are looking at basically in a couple of areas. Labor market information obviously is an important aspect of just understanding the quantity, the quantification of jobs and green collar jobs.

But we are also going well beyond that looking into establishing regional industrial plans. Looking at how we create jobs and training programs that will lead to, as you are describing, high-quality, sustaining employment for this new emerging sector.

And then working with community colleges, the Employment Development Department, the California Workforce Investment Board and the -- I'm forgetting one. Well. But looking to set up the types of training programs that will lead to these high-quality jobs and that will be meaningful for a new alternative renewable fuel industry.

Let me ask Aleecia Macias who has been

working very closely as well as Panama Bartholomy who is the Chairman's principal advisor. They have been the two lead folks from this agency who have been working closely. So is there anything you wanted to add?

MS. MACIAS: We have attended the Green Collar Jobs Council meetings and have taken those comments into consideration. And some of the things that we are looking at are the kind of programs that are transitional, where they might start out as entry-level but they lead to advanced degrees and certifications. So we are working with the Green Collar Jobs Council and also with Workforce Investment Board very closely.

And as Mike mentioned, there are a few inter-agency agreements in place to kind of rely on the expertise and see what is going on regionally and develop programs that meet regional needs as well.

PRESIDING MEMBER BOYD: Thanks, Mike.

MR. SMITH: Peter, I will just, I will just conclude on that. This is an area that is new to us at the Commission. We have been exposed to it through this process for about a year now and have learned a great deal and there is a great

deal that we still have yet to learn. And so your advice and your continued input into this process would be most helpful and most welcome.

PRESIDING MEMBER BOYD: Thanks, Peter. I think Chairman Douglas and I are both aware, this is an area that the agency jumped on, the Energy Commission jumped on real early, fortunately, and actually has compiled a fairly extensive dossier of ideas, proposed work and what have you. So I wanted Mike to elaborate on that.

Here's one where I think we have a fairly good feeling about that we are staying up with the curve and that we will be able to move fairly rapidly. Thus frankly our recommendation to industry pretty heavily early on in this particular component. Other? Jack.

MR. KITOWSKI: Let me jump in with some, I don't have any questions but more formal comments on an ARB perspective of this funding plan. First of all I want to acknowledge the tremendous amount of work. It's a rather substantial document and I think it is fairly robust.

This Committee has had some strong comments at past meetings on a 2050 Vision and the

need to have that 2050 Vision. We see that the document represents that and we are very appreciative of that. ARB has developed quite a number of incentive programs on our own over the years but I don't think any of them have had the sort of flexibility or breadth that you guys have within this program, the ability to fund so many different types of projects. And that's a lot of responsibility.

You guys, I thought you have taken a very logical approach and I think your end product reflects a very -- it's a balanced and robust approach and we are strongly supportive.

ASSOCIATE MEMBER DOUGLAS: Thank you.

PRESIDING MEMBER BOYD: Thank you Jack. Any other questions or comments from the folks around the table? And Advisory Committee members on the phone, please feel free to jump in any time, I'll recognize you. Richard.

MR. SHEDD: Yes. Thanks, Jim.

I also want to applaud the work that went on by the staff in this report. It was very well done I thought. They had to cover a lot of ground. And I think the challenge ahead of us is making this a successful project.

One of the things that I would like to comment on from the public fleet sector is historically infrastructure has been our Achilles' heel. We have been able to procure alternative fuel vehicles over a number of years but applying the fuel for those has been quite the challenge. So we are left to our own devices to install our own fueling stations to accomplish those goals.

One of the things that I noted in the report, which I am appreciative of, is the co-funding or cost-sharing of some alternative fuel infrastructure out there. And one of the comments that I would make would be, when it comes time to evaluate projects of that sort, to ensure that we get he most bang for our buck. To hopefully locate those facilities --

(A sneeze was heard over WebEx.)

PRESIDING MEMBER BOYD: Bless you.

MR. SHEDD: Hopefully we can locate those facilities where not only the public can take advantage of a fueling source but the state, federal government, any city or county fleets that might be able to get into proximity of those stations.

I know there's been a number of stations, ethanol E-85 stations going in very recently and we are very supportive of those. One of the things that is a challenge for us is if they are not in a location nearby where our fleet is stored or housed we can't get as much throughput through those stations as we would like.

So I would suggest that in the evaluation if there was any way of overlaying not only where the public's vehicles are but any other vehicles from the state. The General Services Administration which we met with a couple of weeks ago is having the same problem on the federal vehicles and that is getting the alternative fuel in those vehicles.

And then there was another question that I had and that was regarding the federal stimulus funding. There is a very aggressive time line that public fleets are engaged right now in trying to acquire some of those funds.

Obviously with the state of the budget being the way it is, not only for the state of California but for local cities and counties, one of the things that they are up against is the 50

percent cost-share that the federal government is requiring.

And I was interested in whether or not the vision that you might have would be able to leverage not only AB 118 funds to help support some of those initiatives because they are very analogous to one another, and whether or not, or whether or not you would believe that if government was going after federal funds that would preclude them from AB 118 dollars.

PRESIDING MEMBER BOYD: Well I'll just make a comment and I am sure Chairman Douglas will have a comment. We are very cognizant of the economic stimulus dollars available in Washington. We immediately recognized and jumped on internally planning with regard to what AB 118 brings to us. It brings to the state of California in total, and I mean public and private sector, the opportunity to have some fairly immediate cost-share, if necessary, for projects that could be or will be funded, partially with the federal economic stimulus money.

So we have recognized that. I don't want to talk to much about our plans in detail but we have fairly significant plans. And we intend

to use every penny in this Investment Plan as a lure, let's just say, or as California's share of whatever matches there might be required of a whole host of different kinds of projects.

I mean, most of the projects we are thinking about that are listed here, many of them anyway, offer immediate attractiveness, we would hope, to the federal government in terms of being ready to launch plans rather than just making plans. So we are very hopeful we can do that.

And something you said cause me to ask you a question, Richard. You mentioned meeting with GSA. Has there been any discussion between General Services, GSA and maybe the rest of us about whether GSA, whether we could have some kind of mutual support activities among the states where they might put in and we might put in, in California, with regard to our funds, their funds and a total number.

For years we have always fought the chicken and the egg situation. Here we have got, should I say, feed corn for the chickens. We've got carrots for the chickens and we have got some form of transportation to keep the eggs moving along too. In any event. There has to be some

humor in this place once in a while.

MR. SHEDD: No, and we were, we were looking for the exact same thing. To develop a consortium, if you will, of those types of fleets that could share their fuels. It is even difficult for state agencies to share fuels based on the facilities they may operate. But those are the things we are trying to overcome.

One of the challenges that they presented to us was that most of their fueling infrastructure, if they have any at all, is generally on military bases, which didn't afford us access for security reasons. But we are still in discussions with them over that because I think having individual fleets own and operate their own fueling resources, while it may support --

(WebEx interference was heard.)

PRESIDING MEMBER BOYD: Folks, you are having a conversation out there on the phone. If you would mute your phone we all wouldn't be privy to it.

ASSOCIATE MEMBER DOUGLAS: I did also get an e-mail suggesting that we speak closer to the mics and I neglected to mention that until

now. Thank you.

MR. SHEDD: But yeah, we are looking into that. Because we think that if we can share those resources across department lines, even with cities and counties or the federal government, we might be able to get far more throughput of these alternative fuels into the fleets in the state.

PRESIDING MEMBER BOYD: Thanks.

ASSOCIATE MEMBER DOUGLAS: All I will add on the stimulus is that we have thought a lot about it. We definitely believe that California is very well positioned to be competitive for the transportation funds, both because we have an Investment Plan and because the state has stepped forward and put a significant amount of money on the table, not only this year but for a seven year period.

So we are thinking a lot about how to use 118 funds as a potential match and potential leverage for federal funds. That is one reason why we find ourselves in a somewhat more dynamic situation than we had originally anticipated when we began this process. Not only was there no stimulus plan when we began this process but there was no financial crisis. The situation has

changed considerably since we really started our work.

PRESIDING MEMBER BOYD: Seeing no other -- yes, Dan.

MR. EMMETT: Thanks. I am going to reiterate something that has already been said but I do want to say it. First of all thank you so much to the staff and Commissioners for the great work on this, this document, this plan. I think it really does reflect of input that has been made and the comments that have been made by this panel and the stakeholders.

Like others I am also pleased with the additional attention to the 2050 time line and the additional focus on the super-ultra-low-carbon fuels. But I am also glad that there is a lot of immediate work that can be done on the ultra-low-carbon and low-carbon front with natural gas. So I think it strikes a great balance and enables us to get moving quickly forward on deploying solutions for the state that are going to get us well down the road.

I also think, however, that the flexibility that is built in is really key. When this was just a bill, it wasn't on the hill but I

want to sing that rhyme. I advocated strongly at that point too for flexibility, recognizing that certainly in seven years, and even in lesser time frames than that, things shift. And as articulated by you just now, with even what we have seen in the last 12 months, it really is important to have that flexibility.

That said I think what is in there is right for right now. In the case of hydrogen I just want to say we have advocated strongly for more funding for hydrogen. That reflects what we have been seeing as a need and a gap that needs to be filled. We need to make sure there's infrastructure there for the vehicles that are coming as part of the ZEV regulation and that are already on the road. And this I think reflects, reflects that.

I also think the partnerships that you identified already just in developing this plan is really important. In fact you have called out in this meeting already these key partnership. Your allies in implementation of this is really I think appropriate and speaks to Jananne's concern of, you know, boy, this is a really big task to get all this done.

And when you have the kinds of partners like you do with CARB and with the South Coast Air Quality Management District and other agencies on the implementation of removing barriers on the certification and standards, et cetera, that's really key.

Finally, one area I do kind of have a question still is obviously this is really about deployment. We have got to get these solutions out there in the field right away. But the bill does call for research and development, demonstration and deployment. And I see very little on the R&D side. And I think that that makes sense.

That said, I know that in earlier iterations in discussions of this plan there was discussion about sort of the outside of the box ideas that may land, and that speaks to the flexibility. And I am just wondering where, you know, how you create space for R&D opportunities that come along sort of earlier that aren't being funded that are real opportunities for California.

How is this plan going to make space for those kinds of more R&D demonstration-type solutions as opposed to the actual deployment?

Those solutions could be huge game changers for us, we just don't know them yet. So that is one area. I do have, have a question. Otherwise congratulations and thanks for the ability to participate.

PRESIDING MEMBER BOYD: Dan, a comment on the R&D component. We wrestled with that. Of course as you would recall even better than I in the passage of, in the debate leading to passage of the bill there was huge emphasis put on the demonstration and deployment of the R&D, D&D equation and we certainly heeded that advice.

Although we also recognize the need on the occasion for R&D, as we balance this first two year plan, if I can call it even two years, we recognized here that just like ARB is doing certain things we are doing certain things.

Here we also have our Public Interest Energy Research program which does, you know, really pure R&D work. And the Legislature finally did a couple of years ago give us authorization to venture into the transportation arena. And we have and continue to try to support a few really R&D activities.

I guess the one that passes through my

mind at the moment is a couple of years ago we established the plug-in hybrid electric vehicle center at UC Davis and had a research advisory committee that have been guiding work in that particular area. We have got other things, contracts we have let for research and others pending.

It is a balance. And I think -- Another thing that went through our minds as well. As soon as we get the, as soon as we get responses to our earliest solicitations we will see how fertile or how vacant perhaps the landscape is. And that may give us some greater hints on where we may have to -- maybe shovel analogies in this day and age. But dig deeper, I was going to say, in terms of just pure R&D.

I mean, we are hoping the industry out there is recognizing the needs of this country and the state are indeed doing R&D as best they can. But that's kind of a hope-for that came before the financial crisis and we are going to recognize that that world may change on us pretty quickly.

ASSOCIATE MEMBER DOUGLAS: Dan, I would also like to add, before you go into any additional comments. As you talked about hydrogen

I wanted to stress that at least in my mind it is a very large investment for hydrogen. I think some investment may be justifiable on the basis of the existing cars on the road.

But our thinking is in the stress on public/private partnership is really looking forward to the extent that we have very firm commitments towards new vehicles from the auto manufacturers in line with the ZEV mandate and under confirmed time lines that are at least foreshadowed by the fuel cell partnership. That's really what triggers the potential for large gains from a large state investment. It is not the existing cars on the road.

PRESIDING MEMBER BOYD: Yes Will.

MS. DIN: This is Carla Din on the phone. Can you hear me?

PRESIDING MEMBER BOYD: Yes.

MS. DIN: Great. I too would like to commend the staff and Commissioners for their excellent work on this report. I was very pleased to see the focus on economic development. I appreciate Mr. Boyd's opening comments about how this effort can help address the great economic needs that we are facing in the state.

I am very pleased to see the substantial funding for workforce development and support the ties to labor market information and a regional industry approach. I think it is very excellent that there is a focus also on in-state production through the manufacturing incentive program. I think that's terrific.

There is one thing that I would recommend that addresses the comment that Peter Cooper made about the need for quality job creation. And that is to develop economic development criteria along the lines of the sustainability evaluation criteria, which is on page 41. And this could be used in terms of the overall evaluation of project proposals.

This would be in line with AB 2267, which was signed last year, that gives priority to projects that result in job creation and economic development in California. And this applies to California Energy Commission incentive programs. So I think it would be very fitting to have that additional overlay in the criteria.

PRESIDING MEMBER BOYD: Thank you, Carla. Will Coleman.

MR. COLEMAN: So just building a little

bit on your comments before but also just I wanted to say that, I wanted to congratulate Peter and Mike and the rest of the staff in putting together a pretty thorough document. I think that it has evolved a lot since the fall when we first saw it. And I know it can be a thankless task when you are trying to allocate funding. You are always going to get people saying, well why this and why not that. Along those lines. (Laughter)

I just want to, I think that it is probably going to get even more thankless as this document starts to become more public. And I think that people are going to dig into the details and wonder a lot about why this and why not that. So I just want to point out a few things that I think we might run into some trouble on and maybe point us towards things we can do moving forward.

But the first is that I think that the TIAX study that was originally done was a good baseline for where we wanted to started. And I think that the CEC backcasting, the 2050 backcasting was also an interesting effort. And I am sure that the stakeholder comments that have been made along the way have helped inform where

we are going with this allocation.

But I think that we need to do a significant amount more analysis in terms of gap analysis around where this funding would be best deployed going forward. And I saw that more funds were put in the, in the non-greenhouse gas initiatives but it didn't seem like a lot more was put into doing that analysis and actually the need to deploying this plan. I think $1 million seems actually pretty small to me to go about selecting these different projects and doing the kinds of analysis to pick the appropriate projects. So I would love to see more go into those buckets to help support that.

ASSOCIATE MEMBER DOUGLAS: Will, it actually is more. The $1 million is for the technical support contract.

MR. COLEMAN: And then there's $4 million, right?

ASSOCIATE MEMBER DOUGLAS: Right. The $4 million is really for the type of analysis that you are talking about.

MR. COLEMAN: Yes. So I think, I think both make me nervous. I think the $1 million for the technical support contracts seems small and I

think the $4 million for analysis may or may not be sufficient. But I think that we just need to do an extensive amount of analysis that does something more than what we have done.

I think that the original analysis looked at where funding had gone but it didn't really look at things from a needs assessment. So based on how private funding is likely to follow on public funding. You know, where public dollars can be deployed most efficiently and apply to unlock that, that private funding.

And so some of this is going to be qualitative. But I think that we have to think a little bit more about leverage in this effort. Because I think that leverage is a little bit of a dirty word these days when you think about what has happened in our real estate markets.

But when you think about the amount of money we are deploying it is only about $176 million over the next two years and that is really tiny compared to the total amount of dollars that are required to go into the space. I mean, a single ethanol, advanced ethanol plant of only 50 million gallons is around $220 million. So, you know, we need to figure out how these dollars can

actually catalyze private dollars to be invested in the space. Otherwise we are just going to be pouring money into individual projects and we won't be getting leverage on those public dollars that we spent.

So this brings me a little bit to the current allocations. Which I appreciate the focus on the 2050 Vision. But I noticed that the combination of electric of hydrogen drive vehicles doubled in this most recent version in terms of the allocation as proposed in the last one.

And I am actually pretty concerned about the focus on hydrogen. Probably the good thing is we have a mixed set of views here on the panel, I think. But I am concerned because, and I don't mean to pick on hydrogen specifically but it is sort of a good example of where, of where the cost and impact need to be better aligned, I think, and where we have to think about the timing of those impacts.

You know, as an investor I can tell you that on the private investment side investment in fuel cells or hydrogen for transportation has dried up significantly. And it is in large part just simply because of something that was said at

the last advisory board meeting which was that these vehicles, you know, a car really cost about $1 million. A fuel cell vehicle car really cost about $1 million to build. Now you will get economies of scale, you will have decreasing cost curves and all those things.

But the concern is that there is an enormous number of things that need to change including infrastructure, massive decreases in the cost of vehicles, a significant transition of our electricity generation portfolio so that it is cleaner and providing cleaner hydrogen, significant scientific breakthroughs just in terms of hydrogen storage and energy density, and some proof that people will actually buy hydrogen vehicles.

Those are significant hurdles to overcome at a time where you are looking at decades in terms of presuming that this is the best potential application today for 20, 30 years from now. But as we move forward it is likely that other technologies are going to come along.

And so I think the question is whether it's what we should be doing as investing in deployment for fuel cells and for hydrogen today

or whether we should be investing in say R&D for fuel cells and hydrogen today. And if we are going to invest in R&D for fuel cells and hydrogen today then I think we need to take a harder look at how that R&D investment stacks up against other ways to deploy this money in terms of the dollars per reduction basis, of reduction of greenhouse gas emissions.

And I think that if you look at the table in the back of this document, I think it's D-2 or something or D-3. It shows what the projections are out to 2022 around reductions from hydrogen versus say biofuels. And if you look at the two here, you have got a $40 million allocation to hydrogen and you have got a $12 million allocation to biofuels. And yet even out at 2022 you have shown much more reductions from poplar than you do from hydrogen. And if you look at 2017 the gap is enormous.

And I think part of that is that the hydrogen investment is predicated on a very long-term view of hydrogen and there's significant uncertainty around that. So I think you have to put some sort of, you know, discount rate or some sort of beta on that and assume that this may or

may not happen. And we have to think about that I think in terms of how we deploy these dollars.

So that kind of gets me to my last point which is that I voiced concern at the last meeting about too much reliance on the 2050 Vision. And I think we all agree that we have to get to the 2050 Vision and that is something that has to be front and center.

I think the question is whether or not we focus heavily on the 2050 Vision within the first two years of funding or within the second or third or third or fourth or fifth or so on and how we go about doing that. Because I think that it is very hard to predict what those technologies are going to be. And I said this last time and I probably sound like a broken record but a lot, a lot is going to change.

I appreciate the portfolio approach but it is far more likely that you are going to see essentially other technologies emerge that are improvements on today's technologies than you are going to see wholesale change in infrastructure and transition, even over the next 20 or 30 years, much less 41.

So, you know, I think we have to be

cognizant of that risk and not try and backcast the future too much, if that makes sense. I think that we have to figure out a way to be more performance driven in the way that we think about allocating these dollars.

And I appreciate the fact that there was an urgency with this particular plan to get allocations done, to seek stakeholder comment and to figure out how to deploy these dollars in a rational way and I think that is being done.

But I think that to make this program successful I think we have to figure out how to integrate some sort of performance metrics and say, okay, we are going to look at all these technologies based on the total dollars in, public dollars in, the reductions we get as a result of that, and the kinds of additional private investment required or the kinds of additional private investment unlocked by that investment. Because otherwise I think we are going to be sprinkling a little bit of, you know, confectionery sugar on the top of a cake and I don't know that it actually bakes the cake.

So, you know, I would love to see that done. And at the very least I think -- One of the

things I noticed in here was that in the last revision or actually evaluation criteria, and I actually couldn't find them in this document, I don't know if they have changed or whether they are in some other document at this point. But there was nothing in there that actually measured the effectiveness of these projects on an individual basis and using the kinds of metrics I'm talking about.

So how effective were they at reducing or will they be at reducing carbon emissions and increasing jobs and decreasing dependence on petroleum and the other objectives of this program per dollar put in? And so I at the very least would like to see that in this Investment Plan and then would hope that we could revisit the idea of putting performance metrics in there to do the selection and the allocation in the next version of the Investment Plan going forward.

ASSOCIATE MEMBER DOUGLAS: Will, we -- I'll just make two brief comments. We absolutely intend to evaluate and so I think I will ask staff to talk about how evaluation can take place.

In terms of performance metrics, we have thought a lot about it. And I think one of the

challenges is that this is such a broad-based program that your different categories really are targeted at achieving different goals.

And so if we take, you know, natural gas for example. In that case, why would we want to invest in that? Well, it gives us very significant short-term benefits. The vehicles are cleaner, there are air quality benefits, there are immediate benefits. If we turn around and look at research funding we might find zero reductions per dollar spent but there are potential reductions.

So your evaluation metrics for such a diversity of potential projects that we have before us really, you know. I think it is very challenging to think about how to do that in a one size fits all approach. I think what could be done is more articulation of what is seen as the benefits of some of these different categories or approaches and maybe some more specific articulation of that. Recognizing that they will all be in furtherance of our statutory goals but might be quite different from between one category and another.

MR. COLEMAN: Yes, and I appreciate that. I think, I think that it is obviously

extraordinarily difficult to do a one size fits all type approach. But that said, I think on a basic level there are metrics that we can use to at least score some of these technologies and take into account potential reductions.

So I think the potential reductions are important but I think that our mission here is to catalyze those potential reductions with these dollars. And so to some degree we have to be able to tie a link between the investment that we are making through this program and those potential reductions.

And if we can't then it's a hard place to invest those dollars. Because one could either argue that our dollars are unnecessary in that case or that they are just not making the impact that we want. And so I think there's a way to do it. I think that is obviously challenging and it will obviously be questioned. But I don't know that it will be any more questioned than trying to, you know, do these allocations with tons of people in the background saying, my technology is better than yours.

PRESIDING MEMBER BOYD: Thanks Will, I always appreciate your comments and the value of

them. For a while there I was beginning to think you were sitting in the room with us sometime ago as we debated how to get from the last iteration to this iteration and back and forth between where you put the dollars.

I think, I think we probably erred a little bit today in not discussing the amount of time we did talk about the need for performance metrics, project metrics and what have you. And I will go so far as to say, in particular as it relates to hydrogen. That was a tough decision to make. An awful lot of input about the thin ice that this is on, the promise it has for the future. So a little bit of maybe front loading.

But that money will have performance criteria tied to it. Perhaps more than other categories. But with us designing, let me call them off ramps in the project, that allow -- if the partnerships don't develop. Industries who have to step forward and perform don't perform then we too will maybe make a decision that is not the best use of the money.

I think that performance criteria applies to everything we are talking about. We should emphasize it more. But believe me, it was

talked about long and hard with regard to a couple of fuels, hydrogen in particular. And, you know, we shall see what the future holds. Mike, did you want to add anything?

MR. SMITH: Commissioner if I just might add one, one point. Will, your comments are very well taken and get right to the heart of one of the areas that we are focusing on in developing this program. In fact, at the Business Meeting this Wednesday we will be putting before the Commission a contract that does a couple of things but one of them is to begin the development of these program metrics. So I think that that is going to be the starting point for us to getting to the place you want us to be in, where it is a performance-based program with very clear metrics as to how we are allocating money and why.

And if I might take the license of using you as a member of the Advisory Committee. We may want to call on you to help us out with, you know, kicking off that contract.

MR. COLEMAN: Absolutely.

MR. SMITH: We would welcome your input on that.

PRESIDING MEMBER BOYD: Bonnie.

MR. EMMETT: I have one --

PRESIDING MEMBER BOYD: Oh.

MR. EMMETT: I would just like to make one follow-along if that's okay, I'll be quick.

On this hydrogen topic since it is a bit of a target. I am confident that as part of the discussion that went on that you just referred to that a significant piece of it was this looming delivery of significant numbers of vehicles, I mean significant for California. It may not be huge but at least in the thousands of numbers of vehicles in a relatively near time frame, in the 2010 to 2014 time frame, as part, under the ZEV reg.

And while I would completely agree that the true potential of this technology to deliver large greenhouse gas benefits is out much further, 2050, we have a true need right now, a potential need to meet the delivery, to support the delivery of these, of these vehicles in which, you know, millions and millions of dollars have been invested in developing this technology. And it does hold promise.

So I would agree that, you know, we need to see if there are bites on this, on this

funding. And if there aren't then there needs to be another mechanism. We have got the potential of a clean fuels outlet program modification at the Air Board. But I think everyone prefers incentive over regulation. And certainly, you know, there needs to be a minimum infrastructure to support the vehicles being deployed under the ZEV reg.

And that's why I think there is this balance of near-term versus the long-term benefits. It is hard to sort of really in a uniform way talk about costs versus impacts. So thanks.

PRESIDING MEMBER BOYD: Bonnie.

MS. HOLMES-GEN: Thanks. I would like to second Dan's comments on the appropriate balance between keeping a focus on the 2050 Vision and providing funding for near-term opportunities and the flexibility you have built in, you have done a great job.

I wanted to just make a brief comment that there's a very small but important funding stream in here and that is the funding for public education. I just wanted to affirm that as a very important area. I hope that will grow a little

bit in future years as we move forward. I'll look forward to seeing the funding plan.

This area of identifying how to best educate the public, help the public change attitudes, doing social marketing, helping people make better decisions and focus on cleaner transportation choices and deciding to use alternatives to the vehicle and reducing their vehicle use. Focusing on transit and walking and bicycling and other choices. This is so critically important to all of our AB 32 efforts.

And I don't know that there's a lot of money out there in state government right now focused on the public education component and I am very concerned about that. So I really appreciate that we have this $1 million set aside. And I do think that needs to grow and I do think we need to be very concerned about how we are getting, how we are developing and getting messages out to the public and changing public attitudes, especially in this area of transportation, which is so critical to our AB 32 efforts. So I would just like to pledge the Lung Association's help, whatever we can provide. And suggest that the public health community in general can be a

tremendous resource in this area.

PRESIDING MEMBER BOYD: Thank you Bonnie, appreciate it.

MR. SHEARS: This is John Shears. I've had my hand up on the WebEx.

PRESIDING MEMBER BOYD: I was just about ready to call on you invisible people, John. I think I saw your hand up.

MR. SHEARS: In fact, Bonnie took the words out of my mouth. I was also going to highlight, you know, the importance for public education going forward. That is an area that our organization is also working on.

That being said, I would just like to commend the Energy Commission and the staff for the huge amount of work that has gone into the program. And also recognizing the incredible demand being placed on the Energy Commission to meet and address various stakeholders' hopes and wishes for this program. I know you have all been under a lot of pressure to produce, you know, a good plan.

And I think we all need to recognize this is. We are just laying the groundwork and we are all going to be working together on this,

going forward to further develop and improve the program as we all learn how effective our initial steps have been in realizing the vision for the program.

So I just want to thank the staff for their openness and their consideration in taking all of the various stakeholders' input as they have been crafting this Investment Plan and the associated regulations. And as we know, as Jim McKinney noted, we still have work to do even now with the sustainability working group meeting later this week. So thank you all.

PRESIDING MEMBER BOYD: Thanks, John. We didn't think the bruises showed to badly on any of us or the staff. In any event, thank you.

Any other Advisory Committee members on the phone who want to make a comment or any around the table before I turn to the healthy deck of cards I have here from folks who want to speak from the audience?

Hearing none. If you will allow me I will start calling on the folks who have turned in blue cards. And I am just taking them in the order in which they appeared. First is Richard Lyon of CyberTran International. You must have

known you were first, Richard, you positioned yourself right up close.

MR. LYON: Yes, thank you.

PRESIDING MEMBER BOYD: But it is sheer serendipity.

MR. LYON: Thank you very much. First I would like to congratulate Commissioner Douglas on her new arrival. The last meeting we were at you were kind of indisposed, to say the least.

ASSOCIATE MEMBER DOUGLAS: Thanks.

MR. LYON: Again just for the record, I am Richard Lyon at CyberTran International.

At the February 25 Commissioner Business Meeting that was used to ratify the regulations for the alternative and renewable fuel and technology program I raised a very serious concern and that concern is still here about the VMT reduction not being taken into consideration and giving a higher preference.

When I brought this up at that meeting it was stated that the programs for VMT reduction would be considered during the development of the Investment Plan. As I read through this new plan section by section, these considerations for super-ultra-low and zero emission vehicle

technologies have not been considered. And I would like to provide a couple of examples.

Looking at the prior plan that Peter and his team had offered in the December 2008 Investment Plan there were funding considerations for super-ultra-low-carbon vehicle technology in Table 0-4, specifically, and this is a quote:

"Support the pre-commercialization, demonstration and development of electric drive technologies for light-, medium- and heavy-duty applications."

That has not shown up in this new Investment Plan.

And those technologies exist now. I have shared those metrics with the Commission and with the staff. It's shovel ready. And I can see it being a very high impact to meet the 2020 and 2050 objectives.

Additionally, another thing that was very concerning in this new business plan is B-5. And this is under the header of Vehicle Miles Traveled Reduction Strategies. And I think this sends a very mixed message and I'll just let the audience get their take on this. And this is a direct quote:

"Therefore, as a result of successful VMT reduction strategies, increasing ridership of public transportation is anticipated. This increased public transportation ridership will result in an increase in the fuel consumed by transit agencies and increase greenhouse gas emissions for this sector."

That is completely kind of not intuitive and against an awful lot of data and information out in the field, that using no public transportation is a solution, not the enemy. So I would kind of like to get the Commission's input on why this verbiage is in the document? And why the prior verbiage that has been supported heavily by Peter Ward and his team on VMTs has not been incorporated? Thank you.

MR. SMITH: Richard, may I just ask very quickly, the page you were citing that was?

MR. LYON: B-5.

MR. SMITH: D?

MR. LYON: B.

MR. SMITH: Oh, B, I'm sorry.

PRESIDING MEMBER BOYD: Thanks Richard, we'll look into that.

Terry Karges, Roush Propane.

MR. KARGES: Good morning. I'm Terry Karges, senior vice president of Roush Performance out of Detroit, Michigan and I am here to talk about propane and propane vehicles.

By reference, Roush Engineering has been the Tier-1 advanced power train supplier to Ford Motor Company for over 35 years. We would be considered the premier power train engineering company out of Detroit, servicing General Motors, Chrysler, Ford, as I say their Tier-1 power train supplier, virtually every major auto manufacturer in the world. We have 2500 people in the engineering business in Detroit and another 500 people down in Charlotte, North Carolina in racing.

For your consideration what we are talking about here is a propane, a liquid propane injection dedicated fuel system for Ford vehicles that do several things. Among them are it is a cost-effective, carbon footprint reduction opportunity that is available today, right now.

It creates jobs. We have developed a

system that can be installed at our factory in Lovonia. It can be installed at facilities right outside of the Ford factory down in Louisville. And the dealers that will be selling these packages can install them so that we are creating jobs right here in California. And it greatly reduces dependance on foreign oil.

I also wanted to mention that last Thursday in Texas we were with the Texas Railroad Commission and all three commissioners stood on the statehouse steps recommending to the industry there, to the fleet folks in Texas and to the communities, that they take a look at the Roush propane systems as an alternative fuel program available right here right now.

There are several things I wanted to step through here with you to show or make a case for increased funding on the propane level. And just to give you some quick history. We have been working for three years with PERC and Ford Motor Company and are introducing today on the market as a 2007 1/2 and 2008 F-150 program a 2009-2010 F-250, F-350 and a 2009 through 2012 E-150, E-250 and E-350.

These vehicles experience the same

horsepower, the same torque as the gas ratings, and the same towing capacity as their gas equivalent.

They reduce the greenhouse gas emissions 18 percent, nitrous oxide 20 percent, carbon monoxide emissions 60 percent.

As you are aware 90 percent of the propane is created right here in the United States.

Our system does not affect the factory warranty. As Ford Motor Company's OE power train engineering company, the same folks who do the development work for Ford Motor Company on their engines did this system. So we are able to maintain the factory warranty.

The cost of adding propane infrastructure is relatively inexpensive, especially compared to alternatives.

We are actually expecting -- We have OBD2 from CARB and we have been informed that they are finalizing the paperwork for us as we speak. We meet all of the other governmental certifications.

And I think significant, especially when you are considering funding, propane is already

the world's third-most used engine fuel after gas and diesel.

And it is readily available here and has some of the best safety records in alt fuel use right now.

These next pages are the product offerings, when they are going to be available and the cost of those packages. Where they stand. The F-150 package as I mentioned is available now, MSRP at 7,795. The F-250 and F-350 will be available in California late-August, early September. The E series, the van series, which is delivery vans for energy fleets, shuttle buses, it's already -- U-Haul has several of these vehicles in test already. Those will be available in December of this year here in California. And then the 2009-2012 E-450 Cutaway, which is a practical shuttle use, will be available in the second quarter of next year.

That's my presentation. Are there any questions or -- if anybody wanted to direct or I can be seated. Thank you.

PRESIDING MEMBER BOYD: No questions, thank you very much.

Next, Matt Miyasato of South Coast AQMD.

DR. MIYASATO: Thank you, Commissioner Boyd. I do have some slides I would like to present. I certainly appreciate both Commissioners for the opportunity to speak before you and the investment Advisory Committee group. The comments I am here to provide represent the South Coast AQMD staff comments on the revised Investment Plan. If you'll go ahead and go to the next slide. I'm sorry, I don't know if Mike's doing it.

MR. SMITH: You need to give me the signal.

DR. MIYASATO: The formatting is a bit off. In general we are supportive, cautiously supportive of the Investment Plan. Acknowledging the staff's, a lot of hard work that they put into it doing stakeholder meetings throughout the state.

There is a concern with the shift that we see that is occurring between the different bins. We noticed that the Energy Commission in the final report went away from the low-carbon, ultra-low-carbon, super-low-low-carbon and we will address that in a moment.

But we do acknowledge and want to

encourage the support for the low-carbon and natural, specifically in the drayage application, and I'll talk about the need there.

And then it has also touched upon, the need for really having a united front for the state and regional, local air districts as we go forward for potential federal stimulus funds.

And then finally we do believe and would echo the comments of Bonnie and others about the workforce training and education. So go ahead and go to the next slide.

If you go ahead and click it let's see if the chart comes up. This is our 30,000 foot view of what has occurred in the plan that was submitted in December of 2008 compared to what has just been newly submitted in the most recent March 2009 plan. You can see essentially the blue bars are what was in 2008. And essentially those allocations have been reduced and the equivalent amount been increased in the super-ultra-low-carbon category, most notably for hydrogen. Go ahead and hit the next --

PRESIDING MEMBER BOYD: Matt, could I ask you what you have in the energy efficiency category?

DR. MIYASATO: We noticed that energy efficiency was zeroed out for vehicles but there was indeed funds available for hybrids, so hydraulic and electric hybrids. So we put that in the energy efficiency category. To show that you are indeed thinking about that and didn't want to discount you in, in your foresight.

Go ahead and click to the next slide, it shows the different categories. And I don't want it to be construed that the South Coast is not a proponent for hydrogen. I think you won't find any stronger advocate for hydrogen fueling in the region. But we want just want to acknowledge a few things if you go to the next slide.

The top graph is showing the greenhouse gas emission reductions that are proposed for the light-duty fleet. And then if you look at the bottom graph that's for the medium- and heavy-duty fleet. And in particular the top bar, the purple color is the super-ultra-low-carbon vehicle reductions. In the bottom graph the red is the light or the low carbon reductions. And if you click it again.

We want to put it in context. We are really about investments in 2009-2010 and yet we

are looking at a forecast out to 2050. So if you click the bar, click it again, you notice that there are some pretty immediate benefits that could be gained from medium- and heavy-duty in the low-carbon arena.

And if you click it again you will see that we are talking about investments for reductions off in the future. So we want to ensure that, and I think it has been talked a lot about today, that flexibility is maintained. Such that if those projects don't materialize then you can use those funds for off the shelf and ready to go projects. So if you go ahead and click the next one.

We are encouraging and supporting the flexibility in allocations, such that if in future term projects don't materialize you can use them for nearer term technologies. Specifically for heavy-duty drayage. Now there is quite a bit of trucks that could be funded at the ports. There's over 2,000. And there is an opportunity through the Diesel Emission Reduction Act in the stimulus bill that we would recommend that you take a close look at and partner with not only the state but with the regional air districts. So if you would

go ahead and click to the next slide.

Specifically in the Diesel Emission Reduction Act there's 30 million for Region 9. But Proposition 1B, and perhaps Jack could give us more insight on when we expect those bonds to be sold and release of those funds.

But if you go ahead and click it again. There's 116 million that is supposed to go to the South Coast region, both at the ports and at the district, where we could really use that incentive funding to encourage the federal government to provide us with more funding for Region 9. Specifically in replacing older diesel vehicles at the ports.

I might also add, if you go ahead and click it again, there is other funding available through the other federal agencies. Through Department of Energy, Transportation Electrification has 400 million, there's Clean Cities. And there's also the FTA which has their TIGGER program, which is Transit Investments for Greenhouse Gas efficiency -- Energy Reduction. I am not sure if I am getting that acronym right.

But essentially going to transit agencies to promote greenhouse gas reductions and

energy efficiency. So I want to encourage and support the comments here to have a united front and joining with all the stakeholders to propose to the federal government.

And then if you go click it again. One final comment is that we would also like to participate with the CEC in workforce training and outreach. Our chairman has announced an initiative just this year to promote green jobs, so it's well in line with the non-greenhouse gas emission category that you have.

As well as we are going to support a Clean Technology Conference to try to align investors with green, start-up companies. So we would like to work with the CEC on those two efforts.

And so final slide is that there's been a lot of talk about a balance so we would encourage you to leverage resources. We again offer our administrative support and resources to bring to bear on this with the CEC staff. We would like you to maintain early greenhouse gas emission reductions where possible. Allow the flexibility such that if projects don't materialize, look at those categories which are

backlogged and oversubscribed. And we would like to continue to work with the staff and the Commission on these efforts. That concludes my comments, thank you.

PRESIDING MEMBER BOYD: Thank you, Matt, appreciate the offer and we will be taking up on that as soon as the dust settles on this subject. I'm sure Mike and his folks will pick up economic stimulus and run with it.

Next, Todd Campbell, Clean Energy.

MR. CAMPBELL: Good morning Commissioners, members of the Committee as well as the staff. My name is Todd Campbell, I am the director of public policy for Clean Energy.

We would like to congratulate staff, the Commission and this advisory board on the final draft of the Investment Plan. We believe that staff has found the right balance to invest in low-carbon fuels that exist today and the low-carbon fuel advancements that will help create added benefits and advanced low-carbon fuel opportunities like biomethane.

We do have a few recommendations that we would like this body and the staff to consider as you move forward before the final adoption and

final of the document. And they cover categories such as light-duty vehicles, medium- and heavy-duty vehicles, infrastructure, as well as kind of what I call added benefits, combining technologies.

On the light-duty vehicle side we would like to see funding coverage to include small volume manufacturers. In the latest proposal I guess up-fits are not included. And that is -- Of course we are very supportive of the OEM product as well. But AT&T just announced a ten-year, $350 million commitment to deploying more than 8,000 natural gas vehicles.

And this level of commitment was made very possible by the small volume manufacturers who produce these types of vehicles. In fact Ford is pursuing a QVM, which is a qualified volume manufacturer status with small volume manufacturers to fill this emerging market. Taking these manufacturers out of the Investment Plan's funding would be a blow to these critical low-carbon fuel efforts. So we would like you to consider re-inclusion of those companies.

We would also like to see consideration of tabling the full incremental costs for light-

duty vehicles for OEMs and small-volume manufacturers. Honda's incremental cost, for example, is $7,000. Whereas a small volume manufacturer on average could be as great as $14,000.

Programs should not overpay for certain product and underpay for other products. And so we would like you to consider that as well as you move forward for funding these vehicles.

In terms of medium-duty vehicles. And you know part of my hard work in the environmental community has been with school buses. In fact, Failing the Grade has always been a very important report for me to write because I think it includes very key policy for the state. It certainly led to national leadership.

We had asked that school buses be removed from this category of funding as the Carl Moyer section of funds under AB 118 can provide critical funding for school bus clean-up. And certainly this is part of the negotiations with AB 118, to try to include those programs by creating funds that would further augment the Carl Moyer program.

Unfortunately -- Let's see. I was going

to say the goal of this funding ultimately is to generate enough low-carbon fuel volume to help meet the goals of the Low-Carbon Fuel Standard. And as you know, because of the infrequency of schedule, and as also due to class schedules, school buses do not generate the kinds of volumes of fuel use that other applications could achieve in other applications.

On natural gas ports we would ask that you consider providing funding that would cover the entire incremental cost of the truck. Unfortunately, several other funding programs, specifically Prop 1B funds when they do come back on line and the federal DERA funds, could potentially buy down a new diesel truck to $25,000 a copy.

Such incentives by the state and the federal government present real challenges to low-carbon fuel purchases and discourage the very goals established by AB 118, AB 32 and AB 1007. As buyers typically, you know, especially in economic conditions as they are, look to purchase new vehicles at the lowest cost. It is therefore critical for this program to provide a competitive edge for these vehicle applications.

I just want to stress that because I see AB 118 as the critical program to bringing on alternative fuels that are low in carbon. All the other programs have been based so much on cost-effectiveness. They have been essentially purchasing, in my view, vehicles that are cleaner in standard but do not achieve some of the very goals that we would like to see such as oil displacement, carbon reduction, as well as emission reductions that go beyond 2007 standards. Emission standards that push for technology to get to zero emissions.

Finally in terms of fueling infrastructure. Actually not finally but the second -- almost finally. While we are very appreciative -- And you know that Clean Energy is a fuel provider. While we are very appreciative of the monies that are set aside for the fueling infrastructure we would ask that half of the $8 million slated for this category be applied to the light-duty and medium-duty, heavy-duty categories.

Fueling stations depend on volume. If you don't have the volume you may build a station but you run the risk of the station not being a viable station. We therefore would ask that you

remove $4 million from this program and increase the natural gas light-duty category from $2 million to $3 million, and the medium- and heavy-duty category from $23 million to $26 million.

And then finally, added benefit considerations. The future of natural gas vehicles is not the status quo. And I have said that in many, many venues. I do not believe that we can stand still as an industry and be satisfied.

We are an industry that constantly innovates and recreates ourselves to stay relevant and out in front and often proving that lower emissions are possible. For example, the ability to manufacture a 2010 US EPA compliant engine in 2007 demonstrates this point. We therefore ask that you allow for the hydrogen and electric categories to be flexible and inclusive of natural gas opportunities.

For example, we believe our current greenhouse gas benefits could be further enhanced by combining natural gas with hybrid and plug-in hybrid electric drivetrains like the Toyota Camry natural gas hybrid. Blending the conventional natural gas with biomethane or renewable hydrogen

is another opportunity, or combinations of all three applications.

We further believe that by recognizing the value of added benefits CARB will be in an even better position to set strong 2030 goals that will help California achieve ultimately our 2050 goals. It should be noted that the 2050 goal's roughly 82 percent reduction of carbon and well-to-wheels analysis performed by the California Air Resources Board demonstrates that landfill gas, or biomethane, can provide an additional carbon benefit, or a carbon benefit beyond 88 percent.

So you technically have a fuel today that could achieve 2050 and certainly help conventional natural gas by blending that gas, that biomethane gas, just like you would blend biodiesel or ethanol with gasoline.

So to conclude, Clean Energy is very committed to this bridging of benefits and this can be evidenced by our operations. The purchase of McCommas Bluff in Texas currently producing 30,000 gasoline gallon equivalents of biomethane today. We expect that to increase significantly in coming years.

The blending of hydrogen and natural gas

to fuel transit bus operators like TransLink in Vancouver, British Columbia is something that we currently do with 50 busses in their fleet. And the opening of a co-located natural gas hydrogen station that will power GM's or General Motors' hydrogen passenger car, the Equinox, are some of the things we are very much involved in and we would like to see more.

So to sum up. We would like to thank staff and this body and the Commissioners for the work, the hard work and the time that you have put into this Investment Plan. It was not an easy task. I think you did very, very well. And a lot of thought -- It is clear that a lot of thought has been put into it. We think the proposed plan with the minor tweaks and additional flexibility suggested will help California achieve its 2050 goals much sooner than 2050. And I believe that, thank you.

PRESIDING MEMBER BOYD: Thanks, Todd. Questions?

Greg Shipley, Biomass Ethanol.

MR. SHIPLEY: My name is Greg Shipley. And I am here not to represent my own projects but instead to represent the ethanol -- the biomass to

ethanol industry as a whole.

I tend to agree with Will Coleman. I think he put his finger right on the pulse of the situation in that to my way of thinking, looking at this Investment Plan, is that you are spreading out too thin. You are trying to cover a lot of bases with not that much money.

And I think today California is looking for the best bang for their buck. And in doing so, if you support biomass to ethanol projects for instance in this, they are the best way to get job training and to actually create jobs.

The best way to reduce greenhouse gases is to actually implement immediately those tools that our transportation industry in California supports. That is, the increased use of flexible fuel vehicles. That is ethanol.

Included in your Investment Plan for ethanol is $5 million to put E-85 stations around the state. All that does is incentivize corn ethanol facilities in the Midwest and imported ethanol from Brazil. That sector, corn ethanol and imported from the Midwest, represents about a half a billion dollars to the California consumers in 2010. That's a lot of money that can be used

somewhere else.

According to the California Biomass Collaborative, California has enough biomass materials to make 1.7 billion gallons of ethanol, which just happens to be what the new criteria would be for 2010 and a ten percent blend of ethanol. It also states that the greenhouse gas emissions would be reduced by three to six pounds per gallon. And these are all goals that are stated in the AB 118 Investment Plan.

I would like to address your attention to the second page on the handouts that I just passed out. This is a small example of a biorefinery that would mean instant economic advantages and thus leveraging AB 118 funds. Especially at this point in time the federal government has hundreds of millions of dollars worth of BOE and USDA funds that can be leveraged with AB 118 funds now. In this cycle, this year.

This is a small plant that produces 12 million gallons per year from waste, agricultural waste. It is supported by technology with the USDA labs in Albany, California along with collaborative efforts by the JBEI, which is a DOE lab in Berkeley, California. And it represents --

For the total amount of biomass that is available in California you could, you could put 142 of these small plants anywhere in the state that supports waste.

And basically, if you included municipal solid waste along with agricultural waste and forest biomass waste, you are able to put these small plants in a geographically diverse area that supports the demographics of where the people live and where the terminals are located.

So going through this. This small plant will provide 200 jobs immediately to the building industry and using local trades. This one is in a rural area so it will impact a rural economy. That's just to build the plant.

It would have 42 minimum skilled operational jobs with a $1.5 million payroll.

It would infuse $60 million as a start-up and $100 million at build-out.

That represents $600,000 in property taxes to those localities.

It includes $3.5 million dollars in new ag sales. Those are supportive type of services in that area with -- Excuse me, those are ag sales that the farmers actually benefit from from use of

their waste materials into new products that they can market.

And $4 million infused into the local economy for services.

Now where does that all get us. It gets us to the crux of the matter of meeting the criteria for the AB 118 funds. You have a positive energy balance. Again, the California Biomass Collaborative says that it is a 6-10:1 ratio. For every one BTU that you use to produce ethanol you would get six to ten BTUs of net energy balance, which could be exported to the grid.

This one project would also support I think it's 327 average households with electricity for the entire year.

You would turn 74 tons per year of CO2 into 30 tons per year of pure oxygen. That is not only sequestering, that's using to an economic benefit.

This project is carbon credit worthy whenever people get their act together on that.

And this project also reclaims 650,000 gallons of water per day that's conditioned and reused.

So all of these categories, they meet the very highest and high criteria that you have established in the AB 118 Investment Plan.

What we are recommending today is that you dramatically reprioritize the use of the funds and add a minimum of $40 million to ethanol.

It would also be a good idea for the state to create some type of bond facility so you can get, these plans can get financing in a very tough environment for financing.

We would also recommend that the CEC implement some sort of streamlining of permitting so we can get these plants out immediately. This is a shovel-ready project, it's one of many, and they are ready to go. I'll take any questions.

PRESIDING MEMBER BOYD: Questions?

MR. SHIPLEY: Thank you.

PRESIDING MEMBER BOYD: Thank you very much, Greg.

Suzanne Seivright, I hope I got that right, Coachella Valley Regional Clean Cities.

MS. SEIVRIGHT: Good morning, I am Suzanne Seivright. I am co-coordinator of Clean Cities Coachella Valley Region, and government affairs coordinator of Valley Power Systems,

Incorporated. If you are not familiar with Valley Power Systems, it is a heavy-duty diesel and natural gas, hydrogen and natural gas engine distributor that carries around 20 different product lines for multiple applications.

I want to thank the investment Advisory Committee for allowing public stakeholders to join you all today to discuss these strategies that will certainly increase the deployment of alternative fuels in our region.

In the current Investment Plan I noticed that the funding in relation to the hydrogen program, it is allocated for light-duty fuel cell vehicles and stations that support these light-duty fuel cell vehicles. It also encompasses fuel cells that will be used in transit agencies to meet the zero emission requirements.

In the previous draft, however, for hydrogen you guys had also incorporated funding that encompassed hydrogen and natural gas blended fuels for transit engines, for transit agencies. And I didn't see an explanation in the current Investment Plan of why that is, why that particular application was taken out.

I would like to recommend that funding

be reallocated to hydrogen-natural gas engines in the Investment Plan. I believe these are truly a precursor to the fuel cell. I mean, they have been successfully demonstrated at Penn State. There is a company, Doosan Infracore America, that has adopted this technology and built a manufacturing company in Suwanee, Georgia last year. And all they produce is heavy-duty natural gas and hoping to move into hydrogen natural gas engines.

Additionally, when you have hydrogen-natural gas engines being used at transit agencies you are going to set the stage for fuel cell engines in the future because you are going to be incorporating those stations already there. So that is my first recommendation.

I have one other recommendation in your area related to public education and outreach. I saw five programs listed, the Drive Clean campaign, which I think is fabulous. I do a lot of reading on that and I also disseminate information to our stakeholders in the Coachella Valley.

You have the California Department of Education's Partnership Academy Program. You have

got the Bureau of Automotive Repairs, XPRIZE, and of course they are in partnership with the Department of Energy. And the Green Alternative Fuel Roadshow.

I didn't see any mention of Clean Cities in this new draft and in the previous draft there was a lot of mention, quite a few mentions throughout the entire plan. And just as a background, Clean Cities is administrated by the US Department of Energy. Most of their goals directly align with what the California Energy Commission's goals are.

We have been in existence for 15 years. Our mission has always been and always will be to increase the deployment of alternative fuels and advance technologies by replacing petroleum fuels. And we have 13 coalitions in California. If you look at a map where our coalitions are located, they directly correlate with the areas that are experiencing poor air quality.

I would like to recommend that there be some mention or incorporation of Clean Cities' programs within the plan to be funded. I mean, the Department of Energy initially funded them through the SEP program. I believe it is just

their energy program funding. Which actually set the stage with a lot of the natural gas stations that we have. Some of the first stations came from that funding and the Clean Cities group.

So I would like to recommend that they be incorporated, I can't say again but be incorporated period, within the public education and outreach section.

And as Bonnie had mentioned earlier, $1 million for publication and outreach, that is not a lot of money. And I am not being critical, I come from a nonprofit background so, you know, beggars can't always be choosers, that's one thing I know well. But just looking at the five groups or campaigns that you had listed, if you were to split that between all five, that's $200,000 and you are talking about an entire state. I mean, public education and outreach, I don't think it's something that should be short-changed.

And I think that how that money is invested, we should really look at the programs. This is not, this money is not meant to sustain a group, it's meant to be invested into support programs that will have like a long-term impact even after you fund it for two years. So that is

something I would like, I would to recommend that the Committee look at once again. Thank you for your time.

PRESIDING MEMBER BOYD: Thank you. Comments, Mike?

MR. SMITH: Commissioner, just a quick note. The programs that Suzanne mentioned were incorporated, included in the report for illustrative purposes. These are not necessarily the programs that we are going to provide funding for. In fact I will also point out that the contract that is up before the Business Meeting on Wednesday also includes a component that would develop an outreach plan. And so it is from that plan that we would then consider how we would use the $1 million funding.

So I just want to make sure -- Clean Cities is definitely on our radar screen for many purposes. But for outreach those programs were just there to illustrate the type -- what's going on, at least at the state levels.

PRESIDING MEMBER BOYD: I always thought during my tenure here that Peter Ward was the godfather of Clean Cities in California so I don't think they will ever be forgotten.

MS. SEIVRIGHT: Thank you.

PRESIDING MEMBER BOYD: Okay, Bonnie Scott, Global Cooling Solutions.

MS. SCOTT: Good morning. Bonnie Scott, Global Cooling Solutions. I'm pretty disappointed in the way the hydrogen funding has been allocated. I appreciated Will's comments.

Pretty much during the discussions early on regarding sustainability the number one criteria states that you will support fuel and technology options with the best greenhouse gas reduction potential. And the plan states that there is no technology at present that meets the greenhouse reductions needed for 2050. And if you remember me from before, I have come up here and stated that our hydrogen on demand unit does meet the 2050 standards now.

I have asked a couple of times for an opportunity to provide a presentation and show you supporting documentation. I haven't been taken up on that so far so I can't see how the plan can make such a claim if it hasn't seen the test results and live demonstration of what we are proposing.

Under the fuel technology definitions

you stated that eligibility should extend to projects that would manufacture these technologies in-state. Yet the plan as written for hydrogen meets the needs of the large automobile manufacturers who manufacture fuel cell vehicles outside of California and indeed outside of the US.

Regarding feasibility. The auto manufacturers' well intention in building the fuel cell vehicles. Reality is that they will only be delivering a few hundred if not only a few thousand vehicles in regional areas that can support those vehicles with the infrastructure required.

And there's many other issues regarding hydrogen infrastructure and fuel stations that are not being taken into consideration. One of them is you need to build the manufacturing plants to build, to produce the hydrogen. There's the storage capacity, the shipping.

Forty million dollars is a lot of money for only 11 stations and basically it's status quo as far as we don't know of anything better to do with the money for hydrogen than to go ahead and propose keeping it at the infrastructure level.

So I'm having a hard time understanding when one of your early story lines regarding the hydrogen was the fact that infrastructure was so cost-prohibitive. That basically meant that it was not real feasible to devote a lot of money to infrastructure. So I am having a hard understanding why the plan is now giving $40 million, and specifically just to fuel stations to infrastructure for those hydrogen cars or fuel cell vehicles that are coming.

If the board is insistent upon moving with funding $40 million for hydrogen infrastructure how can new emerging hydrogen technologies such as your product, which is a hydrogen on demand retrofit -- the plan does nothing to promote these new hydrogen emerging technologies.

Our patented unit uses a microprocessor to communicate with the car's on-board computer system to regulate the amount of hydrogen needed based on the vehicle's power usage at any given minute. It is this microprocessor that sets us apart from some of the other units that are currently being marketed today that are not verified or certified by CARB. It is our

intention to be certified and verified through CARB, but lack of funding and our availability -- we won't even qualify to apply for any funding on this program the way it currently is listed.

So I would like to again ask for an opportunity to present our presentation to you guys when it is, when you are available, you have some time, it takes about an hour. We can give you a live demonstration, we can bring a vehicle with it installed. And show you what we are talking about so you can understand that fuel cell vehicles are not the end all, be all to hydrogen. There are other options out there. And this is blocking us out the way the plan is currently written.

You quoted Albert Einstein in the Executive Summary when we first started this process last year in that we can't solve problems by using the same kind of thinking we used when we created them. Yet that is exactly what this Investment Plan is doing by allocating the entire $40 million to hydrogen infrastructure only, while ignoring the new hydrogen technologies currently being manufactured in California today.

Our question is, why can't the plan

allocate five or ten percent of the $40 million hydrogen fuel infrastructure funds to pursue the emerging hydrogen on demand technology. And there's a fact sheet that I included in a little packet that I passed around.

We did give a presentation to the CEC staff last fall, it was very well received. I would just like the opportunity to present to you folks so you can understand what I am talking about.

I have a 30 year old engine running back in the shop that beats the Toyota Prius for emissions. I think that is pretty significant considering there's over six billion automobiles on the road today. And while maybe by 2050 we might have, you know, a sizable amount of fuel cell vehicles, what about the six billion vehicles that are on the road today? This is something that addresses that issue and addresses it now.

So I would like to strongly urge the Commission to please reconsider allocating some portion of the hydrogen monies to other emerging technologies today. Is there any questions?

PRESIDING MEMBER BOYD: Questions? Thank you very much.

MS. SCOTT: Thank you very much.

MS. HOLMES-GEN: I just would like to know if the staff has reviewed this technology and has any comments on it.

PRESIDING MEMBER BOYD: Mike, it was mentioned that staff has seen a presentation from these folks. Is anybody able to answer Bonnie's question about reaction?

MR. SMITH: We have not looked at the technology in great detail at this point so we don't have a --

PRESIDING MEMBER BOYD: You did say you made a presentation to CEC staff.

MS. SCOTT: Michael Zack, Aleecia Macias and some other of the engineering staff for CEC. That was, I believe, in October.

MS. MACIAS: Yes, we did hear that presentation and we did see the live demonstration. Our engineers have looked at the technology and they can probably talk to you directly about any questions that they have.

MS. SCOTT: All right.

PRESIDING MEMBER BOYD: Do you have -- You say you are seeking ARB certification. Have you presented your product to the ARB already or

are you planning to do that?

MS. SCOTT: We have -- No, we have verification pending in Southern California for the fuel economy piece. There's substantial testing needed for the emissions reduction verification up here in Sacramento. Primarily we lack the funding at this time to go through the process. So we were really hoping on partnering with this fantastic opportunity in AB 118 to get those third-party testing results there and get verified and be in production on this unit by the end of the year.

PRESIDING MEMBER BOYD: Are you in a position to publicly state what it would cost somebody to convert their vehicle with your hardware?

MS. SCOTT: Yes. Passenger vehicle, probably looking three to five thousand dollars, probably not even that high. We are hoping to get the cost down to about $1200. If we were to have received some funding out of this we were going to also offer rebates to consumers. Medium- and heavy-duty vehicles, you are looking at more like a $5,000 range. Then there's all the stationary off-road equipment. This technology applies to

any internal combustion engine, whether it be a passenger vehicle, light-, medium-, heavy-duty and/or stationary item such as a generator.

We are already receiving a 90 percent reduction in carbon and have been for the last year in our lab. So I am having a hard time, you know, not -- I don't know if we are not being taken seriously, you know, you are not believing the technology, or you just don't understand because you haven't seen it. You haven't seen the technology demonstrated.

So you are looking at -- With fuel cell vehicles you are looking at paying $75,000 to $100,000 for a car or a truck. Then the infrastructure to support it. And then I was kind of questioning when I was thinking about all this is, when the life cycle of those vehicles is done what do you do with all those batteries and fuel cells. I mean, do those go in the landfill, are those recyclable? I mean, there's a lot of issues involved here with fuel cell vehicles.

And not that I am trying to say that they are not a good way to go down the road. I just think we have a better mousetrap. And indeed when we get verified through CARB I fully

anticipate working with all of the major automobile manufacturers in providing this technology to them for future new cars to build into their current models.

PRESIDING MEMBER BOYD: Okay, thank you.

MS. SCOTT: Thank you.

MR. EMMETT: Commissioner Boyd, can I just make one comment?

PRESIDING MEMBER BOYD: Yes.

MR. EMMETT: I think this gets to the point of one I raised a little while ago about R&D. And obviously the priority here is deployment and getting the solutions on the road. But to the extent that solutions pop up and staff looks at them and deems them worthy of further investment or investigation, it seems to me that there should be at least some statement. Maybe that's built into the existing flexibility perhaps. But for these outside of the box type of opportunities.

PRESIDING MEMBER BOYD: I appreciate that comment. I over the weekend wrote a paragraph that I am going to give to the staff to perhaps put in the Executive Summary. It is just a broad, general indication that we have to think

outside the box and don't make, don't make the reader think that the only technologies are the ones that are kind of elaborated. I know the staff doesn't mean to leave anything out but I think words are needed in there to indicate that you never know when some technology might come along that is surprising.

So in any event I'll see to it that we look into that a little bit more. I'm almost sorry I didn't ask about it after the last time Ms. Scott was here.

Mr. Chuck White, Waste Management.

MR. WHITE: Thank you very much, Chuck White with Waste Management. Commissioner members and members of the Advisory Committee.

I'll just join in with everybody else in singing the praises of staff. For the most part we think it is a very well-balanced document. However, I do have two and a half points that I would like to bring up that I am sure you will find are very modest in nature and you won't have any difficulty with whatsoever.

The first one. If you could put up the summary slide, Mike, that has to do, I think it's slide ten that talks about natural gas. My first

area of concern has to do with the natural gas provisions that are on, in particular on page 32.

When I first read the document I was a little bit uncertain about what was going to be funded with the $23 million and how broadly. And then it seemed in the table in the middle of page 32 it was restricted to truck and school buses or port trucks and school buses only. And then in the presentation this morning it indicates ports, school districts and public fleets but it doesn't seem to mention private fleets. And I was wondering exactly where that is.

And one example would be the public fleets for, for example, refuse collection. There's our private companies that provide fleets for refuse collection that are under franchise to public agencies. So I was wondering how broadly are you going to be interpreting the public fleet provision and is it, in fact, going to be added to the text of the document, not just the slide itself?

And one other area that I would ask you to consider for funding for vehicles themselves would be both public and private vehicles that are going to be associated with a biogas project or

could be using a biogas project. It's great to produce biogas but you have got to have vehicles to burn the biogas in.

And we would like to see this category expanded to include -- I would like to see all, I would like to see private vehicles included without restriction. But at least include private vehicles that are under franchise agreement to provide a service to a public agency such as a refuse hauler. And then any public or private fleets that are being set up to use a biogas fuel. So that's point number one.

Point number two is on the next, a couple of pages later and that has to do with the fuel production facilities. And in the text it talks about $10 million with an average of $1 million per plant for I guess ten plants that would be funded. Yet in the summary slide it talks about, I think it's on this slide, it talks about five biomethane production plants for $10 million, well I guess with an average of $2 million. So I am not certain which is which.

And maybe this is just part of the overall flexibility you are trying to encourage be included into this plan, which I'm sure it is. I

guess the point I would like to make here is that we are building one right now and it is in the range of $15 million and it doesn't make sense for $15 million on current fuel prices. We are hoping that we can find, you know, three to four to five million dollars to help offset the total capital cost if we are going to do more of these facilities.

Now there's a whole variety of different funding sources as various speakers have spoken to this morning and how they can be all combined. I would just urge you to be as flexible as possible. And if a certain plant were to need $3 million and it seemed to be the most credible plant coming forward then that wouldn't be precluded because of some artificial cap on the funding.

And I don't think that was your intent but I just wanted to bring out this point that I would encourage flexibility. See how many projects come in to produce biofuels. And if you can get ten at $1 million apiece, fine, but I suspect you are probably going to get something like three to four at somewhere more than $2 million apiece over this next funding cycle.

Waste Management is looking at two

additional, at a minimum two additional biogas plants in the very near future in addition to the one we are currently in construction at our Altamont landfill in the Bay Area.

And then my one-half point that I wanted to make is related to the previous two. And that has to do with the fact that we really believe that biogas produced from waste, whether it's anaerobic digestion or landfill gas, is a super-ultra-low-carbon fuel. It is not just a low-carbon fuel, it is not a very-low-carbon fuel. It has a carbon intensity of about ten percent of traditional diesel fuels.

And we really hope that as you go forward that the staff will recognize that the biogas from waste, anaerobic digestion and landfill gas is a super-ultra-low-carbon fuel. It meets all the technical requirements to be a super-ultra-low-carbon fuel and would look at, you know, favorable combinations of funding to encourage this technology to move forward.

As I mentioned in my first point, we need trucks to be able to burn this ultra-low-carbon fuel. Very intense greenhouse gas. It's really the most readily available super-ultra-low-

carbon fuel anywhere around right now in California. Only about on-third of all landfill gas in California is being used for energy recovery right now so there's a huge, immediate opportunity to capture more.

And we would certainly encourage, going back to my point number one, that you broaden the definition of vehicles, natural gas vehicles that can receive funding because the natural gas vehicles are the vehicles we need to burn the biogas, the biomethane that we produce, either from anaerobic digesters or from landfill gas.

So I appreciate your time and attention. Do we need to put these in writing in the next day or two so we can try to get these incorporated or will this suffice?

PRESIDING MEMBER BOYD: I think this will suffice.

MR. WHITE: Great, thank you.

PRESIDING MEMBER BOYD: Thank you. I am told there's a gentleman --

MS. HOLMES-GEN: Could I just ask real quick --

PRESIDING MEMBER BOYD: Bonnie has a question.

MR. WHITE: Sure.

MS. HOLMES-GEN: So is your main recommendation on biogas broadening the definitions of the vehicles or do you also have a recommendation on the funding for it?

MR. WHITE: Well, my two and a half points, I'll just summarize again. Number one was on the vehicles.

MS. HOLMES-GEN: Right.

MR. WHITE: And it seems to be limited to port trucks, school districts and now it seems to include public fleets. I would hop that you would define public fleets to include private fleets that include under franchise services to public agencies such as refuse vehicles. And add a fourth category that would allow public and private fleets that are connected to a biogas project that would be a super-ultra-low-carbon fuel to be able to purchase the vehicles to run on that fuel. So that's kind of point number one.

Point number two is related to the fuel production facilities and the $10 million. And whether it's a $1 million or $2 million, give some flexibility to see what kind of projects come in during this next 14 month funding cycle. And

don't hold yourself to any one number and we'll just see what the best projects are to come forward and what the various combination of funding sources might be. And if you get ten projects that only need $1 million apiece, great. But there may be less than that needing a little bit more.

And then my one-half is, just simply recognize this is a super-ultra-low-carbon fuel and it's one which is immediately available today. Thanks.

MR. SMITH: Commissioner.

PRESIDING MEMBER BOYD: Yes.

MR. SMITH: I would just like to clarify. Charles, I'm sorry about the confusion.

MR. WHITE: I am easily confused.

MR. SMITH: The number of projects is just in there to show, it's for our arithmetic purposes to show the reader how we might get to the allocation. It wasn't put in there as a funding cap on individual projects but rather just as a guidepost to get to the ultimate allocation.

MR. WHITE: And you weren't intending to exclude private fleets then at all either?

(Laughter)

MR. SMITH: That's something I --

MR. WHITE: Or I wasn't confused on that point.

MR. SMITH: No, that's something I think the Commissioners will have to reconsider.

MR. WHITE: Very good, thank you very much.

MR. SMITH: Thank you.

PRESIDING MEMBER BOYD: Thank you.

I am told that there's a gentleman on the phone, a Mr. Nickel, who has a time constraint who would like to say something. Mr. Nickel, have I got your name correct?

MR. NICKEL: Yes. This is David Nickel with Caterpillar from our earth moving division. Thank you Commissioners and committee members. I will be brief. We were able to meet with many staff members of both the CEC and the ARB last week concerning diesel electric technology for off-road construction machines, which is obviously Caterpillar's biggest market.

I just want to call your attention briefly to page 16 of the report. As it is currently written the draft Investment Plan for outdoor applications is limited to applications

including forklifts, truck refrigeration, port cold ironing, and truck stop electrification.

And while these opportunities exist, so too does the opportunity to reduce greenhouse gas emissions from the off-road construction equipment sector. Especially with the focus of stimulus monies for infrastructure. So, you know, we in our industry are looking forward to some of the stimulus money that is coming to help boost infrastructure spending surrounding our machines.

And as I mentioned previously, we are able to restaff on one of these diesel electric drive projects that Caterpillar is currently working on, which is Caterpillar's first electric drive track type tractor or more commonly known as a bulldozer. Our competitors are also working on similar types of machines to introduce into our industry and into your marketplace and we are collecting some data that the staff had requested.

I guess our only concern is that we are not being specifically mentioned in the report. These are valuable reductions that may be missed and we would respectfully ask that the diesel electric drive technology and other technologies similar to it be included in the AB 118 funding

mix.

So that's our only request. I think there's a big opportunity for these technologies in off-road equipment. And I'll take any questions but thank you very much for your time.

PRESIDING MEMBER BOYD: Thank you. Any questions for Mr. Nickel? Mike? Okay. I think we are very interested in this technology so thank you for your presentation. Particularly the concern about off-road types of vehicles.

All right, Mr. John Boesel of CALSTART.

MR. BOESEL: I'm John Boesel, president and CEO of CalSTART, thank you very much. I just want to make some very brief comments.

I want to really again commend the staff for the great job done on this excellent report. Very impressive, you have come a long way. I want to reiterate and support the Associate Member but the Chairwoman's comments that flexibility is important and that these funding allocations are really guidelines. Because I think there will be a lot of great stuff coming in and you want to be flexible and responsive to that.

I think it is also very important as we look to the federal stimulus funds that we try to

as much as possible get CEC and CARB working together on this. You both have 118 funds. And if they can be leveraged and brought together I think we will have more success with the federal government. And really when we think about stimulus funding, now is the time. Between now and the end of May all the proposals will be due so we do need to move quickly on that.

I want to back up Chuck's comments on biomethane. It is the super-ultra-low-carbon fuel, it is the 2050 solution that will succeed. There are a lot of others where there are some questions, some risk, but this is technology that exists today. And one of the key things that happened since the last meeting of this group was CARB released the Low-Carbon Fuel Standard and we now have a ranking for biomethane of 12.5 grams per megajoule versus 95 for diesel.

So I think freeing that money up and allocating money for that purpose is very important. And I would say that there are fleets, and other than just public fleets, that ought to be able to access the funds for the trucks, to use those dollars. There are dairies we are trying to bring into this industry, there are refuse groups

and others that can make use of biomethane and have the cleanest vehicles on the road today.

And then lastly I just want to point out that, or two points, is that some of the best job creators that we are really looking at. The way I see the plan right now in terms of jobs really being created in California are those investments for biofuel production here in-state, which you have allocated a considerable amount of money for and then also for the low-carbon fuel stations. I really see those as the opportunities that will create the most near-term jobs.

And then as we develop our workforce plans I think it is very important to listen to industry. What is industry saying that really needs to be done? Where are the places where they need workforce training?

And then lastly I just want to back one of the earlier comments about having money set aside for innovative projects and ideas. I think at one of the first 118 hearings Mr. Fulks over here said, really cool stuff. Have a fund for really cool stuff. And things may come in that may be really cool and great and you should be open and flexible for that.

Thank you very much for your time.

PRESIDING MEMBER BOYD: Thank you, John.

Pete Price, California Natural Gas Vehicle Coalition.

MR. PRICE: Thank you. I'm Pete Price with the California Natural Gas Vehicle Coalition. Several members of our industry have spoken already so I will try to touch on a couple of new points.

And I just want to briefly say that although we do have a few suggestions we strongly support the good work the staff has done. It's really excellent work. They incorporated many of our suggestions on how to maximize the benefits of natural gas and biomethane and to help the state meet both its 2020 and 2050 GHG reduction goals.

And we think you also essentially got it right regrading the different buckets of funds assigned to natural gas. You recognize the importance of vehicle incentives, particularly in the heavy-duty sector where we think we can make a significant contribution. And as others have mentioned, also recognizing the importance of developing biomethane as a super-ultra-low-carbon fuel.

Let me just make several points, quickly I hope, on light-duty vehicles. The plan proposes to offer a purchase incentive to cover the full differential cost of light-duty natural gas vehicles for public fleets. And as you have heard before we would like to recommend that be extended to private fleets and retail purchasers. And we think you can do so without a big cost impact based on what you have proposed for a couple of reasons.

First just a specific point. The plan states that the differential cost between a gasoline Honda Civic and the natural gas Honda GX is $10,000. It's actually, and this was based on checking with Honda as recently as last Friday, it is actually about $6900 so you can reduce the incremental cost for that incentive.

And for private fleets and retail purchasers, they have access to the federal tax credit of about $4,000, which for the GX, for example, would reduce the net differential cost to a little less than $3,000. So we think you can get some good benefit out of extending it to those private fleets and retail purchasers.

There is a section on retrofits and it

says that the plan proposes not to include purchase incentives for NGV retrofits, largely because of the difficulty in obtaining CARB certification. And we are not going to quarrel with that, it is difficult, it is timely and it is costly to get CARB-certified for retrofits.

But several companies have done so and we see no reason why for those companies that have gone to the time and expense to be certified by CARB that they should be excluded from the incentive programs, particularly because light-duty retrofits are an important part of the NGV fleet. At airports you will see a number of shuttle vans and cabs that are retrofitted for natural gas.

And as Todd Campbell mentioned, just last week AT&T announced what when it is done will be the country's largest fleet of alternative fuel vehicles, all in natural gas. And they are using a CARB-certified system manufactured by BAF, which is a member of the coalition. We think if you want to incentivize greater fleet penetration by natural gas and make it more likely that the OEMs will re-enter these markets you would include retrofits in this vehicle incentive.

And this may be more for clarification but we also would like to clarify that repowers would qualify for incentives. I have got a letter I'll deliver later to the Commissioners from Emissions Solutions Inc. which is also a member of the coalition. They manufacture heavy duty engines to repower both existing and new vehicles manufactured by International. And these engines are certified by both EPA and CARB as OEM engines. And the engines for the existing vehicles are already certified for 2010. The ones for new vehicles they expect to be certified by June 1 for 2010. So we certainly hope those will be included.

On medium- and heavy-duty engines. This is kind of the same argument as on light-duty. We don't see why private fleets wouldn't also be included, particularly given that if they benefit from the federal tax incentive the net incremental cost, and we think it is important to look at the entire net incremental cost for these vehicles, we think it would be much lower and it could be covered.

And it is important, we think, that you look at not just a portion of that incremental

cost but the full net incremental cost. Because otherwise, you know, for the private purchases of these vehicles, if they don't get the full cost covered they just make the vehicle purchase decision that we are, the one we are not trying to incentivize. So we would like you to take another look at that.

On infrastructure, a lot has been said about it already. We support what is in the plan, but as others have said, we would like to see some flexibility. You might just clarify that the numbers in there are indicative only. There's a full range of infrastructure opportunities for natural gas.

Finally in fuel production we want to thank you again for recognizing the importance of biomethane. I'll leave it at that, others have spoken to that. And thank you very much.

PRESIDING MEMBER BOYD: Thank you Pete. Any questions?

All right, next is Stephen Kaffka of UC Davis, the California Biomass Collaborative.

DR. KAFFKA: Good morning.

PRESIDING MEMBER BOYD: Good morning.

DR. KAFFKA: I just have a few informal

comments to make.

First the California Biomass Collaborative is focused on the sustainable use of all forms of biomass in California and its production. I have some concern with respect to the current funding allocation summary about the amount of funds allocated to what I would consider near-term and mid-term alternatives that are realistic and feasible for production of transportation fuels in California.

And I would like to make those comments by referring to the idea of something that is called an integrated biorefinery. I think more and more the future for alternative transportation fuels, at least those made by biomass, will probably, those fuels will be derived from something called an integrated biorefinery, which includes potentially a number of diverse types of feedstocks and produces a number of diverse types of products. Perhaps not all transportation fuels but others that are useful and that also displace petroleum, which clearly is part of our objective.

For example, one of the things I think is important to keep in mind about such processes is that they may not particularly be feedstock

specific. In fact, they might thrive because they would use a multiple set of sources of feedstocks.

One of the examples that we can think of is an anaerobic digestion system that would produce biogas. It is basically an artificial rumen. And those people who know about cows know that cows don't like changes. They like to have things steady and regular all the time.

A mixture of feedstocks can provide a more optimum and efficient digestion path. So for example, fermentation of feedstocks, which is cellulosic feedstocks combined with starch feedstocks and so on, do better with a little bit of oil or fat in that system. It just improves the efficiency, it primes the system. So that kind of system would necessarily operate more effectively that way.

So we could see an integrated biorefinery combining a combination of waste resources, and perhaps even primary feedstocks that would come in for purposes of making the whole system operate better. So in that sense the distinction between primary and secondary generation systems or feedstocks may be somewhat arbitrary. I think it is important to kind of

keep that in mind.

The start-up of an integrated biorefinery is an expensive proposition and so there may be hurdles to financing that in fact AB 118 might be able to help overcome. And I think the amounts of funds that are listed as potentially available for things that might result in ethanol or biodiesel sources, for example, are fairly low in this system compared to other sources. And those are going to be definitely the near-term, the near-term and mid-term kinds of feedstocks that we will be using.

The other thing i would like to emphasize in this process is that technology is not stable. So what might in the current moment look like a less efficient system will evolve over time to be a more efficient system. We have seen that even on the basis of corn ethanol where the newer factories and production processes are much more efficient where they start to incorporate cellulosic biomass into the system, where there's perhaps multiple products that are coming out and new ones that are contemplated.

But you couldn't have that evolution without first building the basic operation, which

may be built at a somewhat lower efficiency then what will eventually evolve based on the framework that is initially established. I think it is important in the funding allocation and thinking about how to allocate funding so that we have to think about how we are going to get these processes underway that have potential to both provide near-term fuels but also to evolve in terms of efficiency and diversity of products.

So that leads me to suggest that we have to be very flexible and pragmatic in the allocation of these, of these fundings and take the desire to reduce greenhouse gases seriously. We have to make the initial steps before we can make the ultimate steps. Basically that's all I have to say.

PRESIDING MEMBER BOYD: Thank you Steve. Any questions?

Bob Riopel, Recreational Boaters of California.

MR. RIOPEL: Hello, thanks for the opportunity to present a couple of comments. My name is Bob Riopel, I'm with Recreational Boaters of California. We represent about three million boaters here in the state. Just a couple of

comments and then one request for feedback from Mike.

First I would like to point out, because there is a lot of emphasis on ethanol, is that corn-based ethanol, particularly E-85, is very harmful to marine engine systems, particularly the fuel lines and fiberglass fuel tanks. So as we push towards ethanol we have to keep in mind that it actually has a very negative impact on the marine industry.

Secondly, I know a great deal of effort was put into the balance and how do we get the best return on investment. And as someone commented, everyone will have a different opinion, and so do we.

I was disappointed to see that there was, there didn't appear to be any funding for R&D into existing engines, gasoline and diesel engines, or things like rebates for either repowers or -- there's actually in the case of marine diesels, there are some aftermarket products that provide a significant improvement over the release of greenhouse gases. So as you move forward and look into possible rebate programs that's certainly an area I would look at.

Now the area I would like some feedback is that part of the fees to finance this program comes from a doubling of the vessel registration fees. And I would like to know where if any, if at all, there's investments being made to improve vessel, particularly vessel engines and systems to remove greenhouse gases?

MR. SMITH: Well we don't have anything allocated in this particular Investment Plan to do that particular, to meet that particular objective.

MR. RIOPEL: Well then I would greatly urge that as you come forward in following years that that be given attention to. There's about a million registered vessels throughout the state. Thank you.

PRESIDING MEMBER BOYD: Thank you.

Tom Koehler, Pacific Ethanol.

MR. KOEHLER: Thank you. It's Tom Koehler, Pacific Ethanol.

PRESIDING MEMBER BOYD: I've only known you about 20 years and I still got your name wrong. Sorry, Tom.

MR. KOEHLER: It's okay. Most of my friends make the same --

PRESIDING MEMBER BOYD: Get it wrong too, okay.

MR. KOEHLER: Yes, so not a problem.

PRESIDING MEMBER BOYD: Tom Koehler, Pacific Ethanol.

MR. KOEHLER: I guess just one overall comment. Which is, going forward we are going to, as a state we are going to need, and I think everybody is in agreement with this, we are going to need everything in terms of technologies and fuels. So I think that the funding plan should reflect that. And certainly in this next two-year period one way to simplify things is essentially take a look at all the main fuel drivers, biofuels, I would consider ethanol being one of the biofuels.

But, you know, renewable fuels being one of them, electricity, natural gas, hydrogen. And assume that there is going to be equal funding for them. Allow yourself flexibility to then make the choices based upon, in the next two years, what really is, what projects are coming forward and what are the performance criteria behind them. So overall comment. I am not sure why renewable fuels should be funded at a quarter of the other

ones and so raise that. Next slide, please.

I wanted to just give a brief overview of where things are to date in the state because they are dynamic and flexible and things are happening in real time. But today, today in the state there are five facilities that have been built over the last few years producing ethanol, mainly from corn being integrated into the existing agricultural infrastructure. Of those five facilities two of them are ours, three of them are other private companies. They represent about 220 million gallons of fuel capacity. Go ahead, Mike.

The economic impact of this so far has been 500-plus million dollars of investment, about 3500 jobs economy-wide in terms of the effect. Obviously net proceeds to the local, state and federal treasuries. New, diversified production in the state. And a platform, a foundation for advanced fuels infrastructure. Next slide.

So currently all these plants today are idle, they are not producing today. And the reason the are not producing is a combination really of the next bullets there, supply and demand imbalance, the oil price decline, the

credit crunch.

This is not uncommon nationally but I will say that plants that are producing today are the ones that have been given state support through a producer payment and their debt essentially is paid off. The plants here in the state are newer, the support hasn't been there, the debt is there. So you can see kind of the direct result of some of the policies that other states have had paying off.

The plants that are here today in California are the lowest carbon producers in the nation. No other plants in this nation are producing lower carbon fuel than these. And it is about a 48 percent reduction in CO2 compared to gasoline using the GREET model.

Even with the indirect land use issue, which is far from certain and highly controversial. But if you add that on these plants are still the lowest carbon producers in the nation from any scale today from ethanol. So California should be proud of what we have on the ground. And as I note on the last slide, ethanol is a very good hydrogen feedstock. Okay, go ahead.

This just is a new report. I just wanted to highlight some -- I think Professor Kaffka mentioned that the improvement in the industry is ongoing. The International Energy Agency suspects somewhere around a 55 percent reduction by 2015. Go ahead.

These plants are the foundation for cellulose in many respects. Certainly in our case. We have won a DOE grant integrating using a Danish technology to integrate cellulosic feedstocks into, into the plants. Go ahead to the next slide, Mike.

And that is what we intend to do first in Oregon and then in our other plant's location. But these plants can and will support a variety of feedstocks and we are actively engaged in the development of that. Next slide.

So this is what I wanted to, and I'll end with this, put out on the table. A state producer incentive as a potential use for these funds. It is truly a performance-based incentive. You don't pay for something you are not going to get, you are actually paying for real production. In this case you would be paying for the lowest carbon produced in the country in this next year.

Why we think it makes sense now, several reasons. One, if we are the lowest producers of carbon I think the state wants to have the fuel. We have a Low-Carbon Fuel Standard that should incent that but really doesn't kick in until 2011 because 2010 is just a reporting requirement. So there's no incentives right now for the, for the use of this fuel, for the oil companies to use it in the state. And then when the 2011 kicks in then at that point in time it would be appropriate to switch the producer incentive to actual cellulose production, which will be coming on-line and will reduce the carbon even further.

So we wanted to throw that out. It is actual jobs today, there's steel in the ground. These are assets for the state of California, low-carbon assets. We ought to be able to use them. There's many models out there in terms of producer incentives, the simpler the better. So I am here today to recommend this possible approach. I'm done.

PRESIDING MEMBER BOYD: Thank you, Tom. Any questions of Tom? Thank you, Tom.

MR. KOEHLER: Thank you.

PRESIDING MEMBER BOYD: Lesley Garland,

Western Propane Gas Association.

MS. GARLAND: Good afternoon. I think it is the afternoon finally.

PRESIDING MEMBER BOYD: Yes it is, isn't it.

MS. GARLAND: My name is Lesley Garland. I am the president and CEO of the Western Propane Gas Association. Our association represents about 110 propane companies through California, everything from small mom and pop companies all the way to publicly traded companies.

California is the second-largest state in the United States in terms of propane sales. Last year we had 650 million gallons of propane sold in the state. About 80 million gallons of that went towards the transportation market with a vast majority of that going towards the forklift market.

When I talk about the propane industry to people who are not especially familiar with it I often reference the famous children's story, The Little Engine that Could. I think most of you have probably heard of the story where the little engine, who isn't quite as fancy and fabulous as some of the other engines, is pulling the train up

the hill and slowly but surely makes it across to the other side. It's days like today where it seems especially apropos because we are the little engine that could on that list today.

Over 20 years ago there were 200,000 propane vehicles on the road in the state of California, today there's hardly any. It is fairly simple to point at what happened. It became really expensive to certify engines and it became really, really easy just to use diesel and gasoline. Everybody knows that a lot of this is driven by the economics of the situation.

But we are fighting our way back. As you will see in the report we have got, and as you heard from the friend from Roush and we will probably here from Clean Fuel USA, there's a lot of things that are right on the cusp of coming into the market.

And one of the things that we really appreciate is that we are finally getting a little bit of help. We are one of the oldest alternative fuels in the state of California dating back to the early 1900s but we have never until the past few years received anything. We are finally getting federal tax credits and now, thank

heavens, we are getting the state incentives and that we are very grateful for that.

But one of the things I would like to, I would like to ask for a few things that I think some of my colleagues from our brother and sister fuels have also asked for. We would like to ask you to devote some funding to new engine and retrofit development. I believe the RD&D portion of this. A lot of -- We have got a lot of engine offerings that are right on the cusp of development and a little bit of financial incentive will help us out.

One thing I would also like to point out is that we are bringing, we want to be good partners in this effort. The industry has an organization called the Propane Education and Research Council, which was also referenced in the report. That Council generates about $50 million a year in different funding and we have made a few presentations to the staff regarding co-funding opportunities. That if we could get a little bit of money from you and a little bit of money from us we can go to an OEM and say look, this is what we have got to help you out. Especially in these economic times when some of the OEMs are having a

really difficult time devoting money to new projects.

A little bit more money here would help us, help us all out because it is an immediate carbon reduction. Propane exhaust produces 60 to 70 percent fewer hydrocarbons than gasoline and diesel. I mean, that's the kind of, that's what we are going after is trying to take some of these vehicles off the, off the market right now.

And that's what our targets are right now. When you look in the report and we are talking about school buses, medium-duty trucks, light-duty trucks like the Ford F-150 and the vans that they are bringing to the market, we are going straight after gasoline and diesel. Take those off the market, take those off the streets and put us on the streets. It's an immediate carbon reduction.

We understand that -- You know, I won't stand up here and ask for $40 million; I don't have nearly that ego. But a little bit of extra money passed in our direction would help us out in the short-term. I don't believe that we are the silver bullet to solve all the problems for 2050. But between now and the next five years I think a

little bit of extra money pushed in our direction would help us out a long way to get that immediate carbon reduction.

I also would echo the sentiment of some of the natural gas industry members who asked for a clarification when it came to these -- when it says the incentives are for public fleets only. I would ask you to also consider including private fleets in there. One of the big things that we have going for us is that when it comes to companies like Pepsi or Schwan's or -- these are not public fleets but they have a significant number of vehicles on the road every day. A little bit of incentive money would convince them to move away from gasoline and diesel and go to an alternative fuel vehicle.

I also would ask that we get some additional detail in the methodology used to justify the allocations. Again, we are bringing more vehicles to the market over the next few years and I would like to see a little bit of more explanation in the report about where the $2 million came from.

And we would also hope that you wouldn't limit the incentives to just the school bus

market. The same engine that is used in that school bus is also available for other medium-duty platforms. Again we are moving them away from diesel and gasoline and moving them to propane so please allow them to use the same engine for other applications.

Also one more thing in the report that was mentioned was the forklift fleet, which we are very proud of what we are doing with the forklift industry. However, also in the off-road market we have some new offerings in commercial mowers. There are about a half-dozen companies, including some you would recognize like Husqvarna and Briggs & Stratton that are offering propane-powered commercial mowers.

These are not the mowers that you and I use on our lawns unless you live on a farm or something like that. But these are basically 60 or 72 inch cutting decks. These are designed for schools, universities, ballfields, cemeteries, where you need to do an awful lot of grass cutting very quickly. These mowers reduce emissions up to 70 percent over their traditional gasoline models and diesel models. In addition the fueling system reduces spillage and it is very clean.

A few of the companies are working on Blue Sky certifications right now for these mowers so I would ask you for a little bit of -- if we are going to include incentive funding, a little bit of incentive funding would go a long way to convince a school district or to convince a university or golf course to use one of these mowers, especially in some of the highest -- the low air quality districts.

Back to the little engine that could, that's me. We are not flashy, we are not going to solve every problem in the world. But what gives me a little bit of hope is I keep hearing both from your side of the room and from this side of the room, the word flexibility keeps being used today.

I would appreciate your flexibility that if I can come back here in three months, six months, a year, 18 months, whatever, and show you that I have a tremendous number of propane vehicles or options available, I would appreciate if, you know, if one of my brother and sister fuels isn't using all of their allocation that I might be able to get a little bit of what is left behind to increase what is available. That is the

sort of flexibility I would like.

And for that matter it goes both ways. If I can't use it I would like you to give it to one of my friends sitting behind me here. So I would ask you to make sure that that is considered as well. Give it to me, take it from me, you be the judge.

But I want to thank you, thank you for your consideration. I think this is two years of work that we are sitting at right now. I want to thank you for including us in the process and thank you for listening to my comments.

PRESIDING MEMBER BOYD: Thank you. And rest assured we will be takers and givers depending on performance.

Derald Andrews, American West Bio Energy.

MR. ANDREWS: Good morning, everyone.

PRESIDING MEMBER BOYD: It's afternoon, sorry.

MR. ANDREWS: Yes, we're there. My name is Derald Andrews and I am a representative of American West Bio Energy. It is a biodiesel refinery based in Richmond, California's fuel refining district. American West has the capacity

to produce 40 million gallons of biodiesel annually.

We come here today to ask the Energy Commission to reallocate funds specifically for the biodiesel category. A 40 million gallon production facility has the capacity to fuel over 60,000 vehicles. Our facility will support a 600 million pound reduction in greenhouse gases annually. That is equivalent to 240,000 electric car and fuel cell vehicles.

Our state today currently consumes three billion gallons of diesel itself annually. We feel that biodiesel is a bare necessity today in this market. And this, you know, to reduce our carbon footprint.

One of the challenges, several of the challenges that biodiesel plants are facing today in this market is having access to deep-sea pipelines. Also bulk storage facilities and also blending facilities.

American West is located within 2,000 feet of the Pacific-Atlantic terminal and a mere 2,500 feet from Terminal 2's deep sea pipeline. American West has received preliminary approval to run a deep sea -- excuse me, to run a pipeline

extension from the site to the terminal.

Basically we are just here today to ask for an increase in the allocation of the biodiesel and we thank you for your time.

PRESIDING MEMBER BOYD: Thank you.

Jon Van Bogart, Clean Fuel USA.

MR. VAN BOGART: Good afternoon. I am Jon Van Bogart with Clean Fuel USA. We are manufacturers of propane systems, the liquid propane injection system for the GM vehicles. We also make propane and E-85 and biodiesel refueling dispensers. And I want to make a few comments on the latest draft.

I too have some concerns about the, the change in funding going away from some of the ready today technologies that are here today. And I think why that is so important, especially in the early adoption years of the 118 funding, are the immediate reductions in greenhouse gas emissions, PM and NOx. Let's not forget about those emissions, there's still a lot out there, especially in the environmental justice areas.

And I think it's a very good investment in the low-carbon fuels today with natural gas and propane vehicles. And as has been said, there's

going to be a parade of vehicles coming onto the marketplace in the next year. Even this year we are going to see four or five new platforms come to the market. This is significant for our industry.

Propane is a pretty clean-burning fuel. Case in point, the GM 8.1 engine is the cleanest engine in its class sold in the United States. It goes up to 33,000 pounds. It is considered a heavy-duty but mainly in the medium-duty class. That is available today in the Blue Bird propane school bus. That is the cleanest school bus sold in the United States. The funding allocations that we have here would fund about 50 of those buses. So when you look at the cleanest available technology today, we are making a pretty small investment that can reduce emissions now, displace petroleum now, gasoline and diesel.

So I think that when you take a look at the plan between natural gas and propane you have about a $45 million investment. I think it would be prudent to put those categories together in a gaseous fuel. There's a lot of synergies between those two fuels in their development strategy for vehicles. I think that would help the industry

produce an additional number of vehicles.

As Roush was saying, they are going to have four or five additional Ford vehicles in the half ton, three-quarter ton, one ton trucks. We are doing the same thing with the GM platforms. And those are a lot of duty fleets that don't have a lot of options right now. Natural gas and propane give them the duty cycle that they need. Some of the advanced technologies aren't really quite there yet or we're hoping that they get there pretty quick.

Another area of funding. In the electric drive I would like to see a category developed in there for an alternative fuel hybrid category. Some of the hybrid synergies that are now coming to the market, cost-effectiveness is getting a lot better. Our industry is now looking at partnering with a couple of the hybrid electrics and also the hydraulics to see which one of those technologies is best integrated into propane engines. We are currently working on a port truck that is hybrid electric. And we think that is going to be a significant impact because of some of the market hurdles that still exist.

LA Unified, when they took a look at

replacing some of their oldest diesel school buses in their fleet they really had to wait until the technology came along that really fit their need and niche in that market and the propane bus did that. And I'll have to say, when we first showed up with a propane bus they weren't too excited.

But we loaded the bus up, actually overloaded the bus, and they took it through a pretty rigorous test up and down the Angeles Crest Highway. And when they returned from that test they said, we do not have a bus in our fleet that can do what your bus just did, and it is the cleanest bus available in the marketplace.

So I think that combining those two fuel categories would make a lot of sense and let the, provide additional choices. It would be difficult to put a number on it but I think an additional $10 million in the low-carbon fuel category would really energize and put a lot of vehicles on the street in a very short period of time.

And in the early adoption years, as the gentleman pointed out from South Coast, when you looked at that light blue line chart, those are immediate results. Every day we get further and further behind on our displacement goals. And if

we look too far into the future, get the cart a little bit before the horse, those are missed opportunities. And I think in these early adoption years California is in a win-win situation with our 118 funding.

What money we would change here and put in other categories with the stimulus funding? A quick add. There's about $6 billion scheduled nationally for the transportation sector. I'm pretty confident the state of California is going to be able to bring home at least ten percent of that. That's another $600 million that can be invested in some of these hydrogen and other advanced technologies.

So those are the comments I had if anyone has any questions.

PRESIDING MEMBER BOYD: Thank you, Jon. Any questions?

MR. EMMETT: I have a follow-up. I was just going to ask, this issue of public fleets. The incentives being limited to public fleets has come up a number of times. And I also noticed it was the same thing in the, the plug-in hybrid conversions I think were also designated for public fleets. I'm just wondering if it is truly

limited to that and if so what is the rationale or if these could be opened up more broadly? That's a question for the Commissioners and staff I guess.

PRESIDING MEMBER BOYD: Well, it is my reading that it is limited at the present time. I think it was limited, perhaps, out of concern for the dollars available in the early year. And those who have approached us most often with ideas and proposals to move their greenhouse gas reduction measures ahead at the state, county and city level. That's one reaction I have to testimony we received or inputs we received. I don't know if there's any other comments.

MR. SMITH: I would like to comment on Jon's point about the alternative fuel hybrid vehicles. And the plan does recognize the benefit of going to hybrid vehicles for medium- and heavy-duty applications and the use of alternative fuel. So it is not precluded from potential funding through this, this allocation.

MR. VAN BOGART (FROM THE AUDIENCE): My point was that if there was a certain percentage that was targeted at alternative fuel hybrids I think it would help the industry go after those

platforms.

MR. SMITH: I see, okay.

MR. EMMETT: Just as a follow-on. I think just from the standpoint of leveraging private sector dollars to me it would make sense to the extent we can use this money to do that and not, you know, use this money to leverage, to match additional taxpayer money but to leverage monies of private industry and fleet. You have got, perhaps you can go a little further with the same amount of money if you are getting a Pepsi or whoever to pony up part of that investment in these, in these new technologies for their fleets. So I would be interested in seeing that at least be left open.

PRESIDING MEMBER BOYD: Okay. Tom Fulks, Daimler.

MR. FULKS: Commissioners and staff, my name is Tom Fulks, I am here today representing Daimler.

Before I give my remarks I would like to first of all commend staff for the very difficult job of pleasing a whole bunch of people, in the process making a whole bunch of people upset with you. Commissioners, in particular I know how much

heat you are taking over some of the funding allocation decisions.

And it just does remind me of a couple of stories of history going back in history and looking at Thomas Jefferson. When he bought the Louisiana Purchase for $3 million people thought he was just absolutely insane, out of his mind. What are you thinking spending that much money on wasteland and savages and we don't even know what's out there. Well, you know, we all know how that turned out.

Similarly Teddy Roosevelt got a whole bunch of grief when he allocated a bunch of public funding for our national park system including Yosemite and Yellowstone and Grand Tetons and so forth. He got a lot of grief for that but it was very far-reaching, visionary and turned out to be very positive decisions that were made way back when. And I think in this instance, speaking for your hydrogen allocation, you are probably getting the same level of grief over the $40 million allocation that you have made.

But I will tell you, if you are looking at the 2050 goals, it is not enough. And I will be bold and egotistic enough to say, $40 million

isn't enough but thank you, we'll take it for what we have got.

I did want to address a couple of very specific points that were brought up today. Just by way of background, Daimler's investment in hydrogen fuel cell vehicles has reached the billions of dollars. And for anyone to say that the investment pot has dried up with regard to fuel cell vehicle technology is flat out wrong in terms of reading the automotive industry's investment plans for that power train technology.

There is no uncertainty of any kind when it comes to Daimler and its commitment to fuel cell vehicle technology. It is moving forward. That along with battery electric drive is the future of the propulsion system for Daimler and I am sure some other OEMs would say the same thing. But speaking on behalf of Daimler, there is no question about where Daimler is headed. There is no question about what Daimler views to be the future of propulsion technology and hydrogen is it.

If you want to take a look at what is a true, zero carbon propulsion technology, hydrogen produced in a sustainable way is a zero carbon

propulsion fuel. So thank you for the fortitude and the bravery that you are showing in making this commitment to hydrogen technology. Daimler at the very least appreciates it and will support you to the mat on that behalf.

With regard to your other spending allocations. In looking at your electric drive -- And I need to make clear, Daimler's interest in electric drive, battery electric drive is just as strong as it is in hydrogen. And in looking at that, what concerns me is maybe shuffling some money into battery research. Because right now we are still getting a lot of comments in on lithium battery technology. And yes it sounds promising but it is definitely not going to be the end-all.

And under that category of cool things we haven't thought of there could be battery breakthrough technology that no one has thought of yet. And I would hesitate to think that we have reached our limit in what we can discover about battery technology. So I don't know where within the electric drive you can fit that but I would like to see some consideration given for battery research.

Secondly within the electric drive area.

Years ago my company MightyComm was involved with the EV-1 program for General Motors and some others in installing electric charging stations. And we never overcame that Beta versus VHS issue which was conductive versus inductive charging. And so we ended up having to install a whole battery of -- pardon the pun -- a whole array of charging stations that had this dual plug technology in it.

We are facing the exact, same situation again now. We have got the Euro version of charger technology versus the Asian versus the American. And we are trying to come up with a standard for electric vehicle charging that everybody can agree to. It is proving to be very difficult. And so what I wanted to do is make sure the CEC does not start allocating funding for battery electric charging facilities before we have some general consensus, among SAE in particular, some general consensus as to what that charging standard is going to be.

We know what General Motors wants, we know what Nissan wants. What we don't know yet is -- the Europeans really haven't weighed in heavily but we know from Daimler's standpoint that it's

got its Electric Smart Program that it would like to deploy. BMW has its Electric Mini Program which it would like to deploy. But that charging infrastructure, the charging standard is yet to be figured out. And so we want to make sure we don't jump the gun on allocating for charging facilities without having that standard in place or at least being close to it.

Also within that category I have to tell you -- Now I'll begin my part of clubbing you over the head with some of what I would consider to be dumb decisions. And one of them is funding kit-type of retrofit plug-in vehicles. It just seems to us that that is a giant step backwards in technology research and development is going back in and retrofitting existing hybrid vehicles with plug-in technology.

It just seems to us that if you are going to spend that money spend it somewhere where it moves us forward rather than backward. Because there is simply no future for at least original equipment retrofit kits for hybrid vehicles. Everybody is moving toward just making them standard technology at some point in the future.

And I don't know, again, where hydraulic

hybrid technology fits into the funding allocation plan. Because hydraulic hybrid technology, while it is hybrid, is not electric. Yet it has, it achieves some of the same benefits that electric hybrid technology does.

I did want to make a comment. And I am not commenting on anybody else's funding allocation but it has been brought up that diesel -- Daimler is also the owner of Freightliner and it is a manufacturer of Class 8 heavy-duty vehicles, diesel vehicles.

And I did want to at least mention for the record that when we are discussing the worthiness or the worth of heavy-duty diesel vehicles we need to bear in mind that in 2010, the 2010 model year, which is next year's model year, the '10 EPA regulations for emissions for heavy-duty vehicles, heavy-duty diesel vehicles will be identical to those of natural gas. And so the criteria emissions coming from the tailpipe of a diesel vehicle that is an '10 model year or newer, there will be virtually no difference in terms of PM, NOx, ROG or anything else, SOx.

And so what I wanted to at least mention to you is that for every dollar invested in

criteria emission reduction for natural gas you are getting 50 cents worth of reduction in terms of cost. There's a reason that you don't need to incentivize diesel vehicle purchases, it's because for the price they are half the price of an LNG or CNG vehicle and beginning in the '10 model year your criteria emissions are the same.

So when it comes to greenhouse gas reductions with regard to heavy-duty diesel vehicles it is really going to be a fuel solution. And so if you want to see greenhouse gas reductions out of your existing legacy heavy-duty diesel fleet the best thing you can do is invest some money into renewable diesel and biodiesel fuels because it is going to be a fuel solution.

Similarly when it comes to criteria emissions and NOx reductions overall. Second generation renewable diesel fuel also proves a very significant NOx reduction. And that is verified by the emissions research being done right now by ARB staff on biodiesel, renewable diesel and other renewable fuels and those results have been trickling out. So there is a NOx solution when it comes to heavy-duty.

So this big focus on port emission

reduction and everything else. Yes, we understand clearly the political approach that the South Coast AQMD has taken to diesel vehicles. We know the decision that has been made. Regardless of that, regardless of the political decision. The economic reality is that people are turning to heavy-duty diesel vehicles because they are half as much as the other ones. And when it comes to criteria emissions in the '10 model year they will be equal.

Lastly, it seems to me that the great funding category that we really haven't talk a whole lot about are the non-GHG funding. That is the fourth-largest funding category in here. There's $27 million in it.

You know, I agree with Bonnie and others that a $1 million allocation for public education on these things is really nothing relative to the overall budget. So let's just take any business that has a marketing budget. If you have a $176 million budget, $1 million for public education or basically marketing is less than one percent of your overall total.

I would recommend at least bringing it up to one percent, maybe $1.76 million. Dig it

out of your greenhouse gas category somewhere, I don't know where. But my only point is, it is not going to do the state of California a lot of good to come up with all these spending allocations, I'm sure they are going to change over the next seven years, and then not tell anybody about it. So we want to make sure that if these great gains are being made that we at least let folks know how they can take advantage of them and dedicate a little bit more effort into the public education.

So with that I'll leave you. If you have any questions I'm happy to answer them.

PRESIDING MEMBER BOYD: Thank you, Tom. Any questions, comments? Peter.

MR. COOPER: Peter Cooper. I just want to comment and support your comments regarding public education. In the vein of thinking outside of the box a lot of people have been talking about focusing efforts regionally on cities. You know, there's the Clean Cities campaign. There's efforts underway to create what are called Emerald Cities throughout the United States with the construction trades and other organizations involved with retrofits in the buildings.

So I would hope that there is some

flexibility for spending around things like city bicycle fleets and efforts to use that as an education mechanism, both for the youth and also for the general public so that they see that as an alternative transportation mode.

MR. FULKS: I have nothing to say to that. Daimler doesn't make bicycles so we are viewing this as an alternative fuel and an alternative fuel vehicle program. So when it comes to public education what we are talking about is educating the public about alternative fuels and alternative fuel vehicles. Thanks.

PRESIDING MEMBER BOYD: Thank you, Tom.

MS. HOLMES-GEN: Can I just make a quick comment.

PRESIDING MEMBER BOYD: Sure.

MS. HOLMES-GEN: Bonnie Holmes-Gen. I don't believe that the issue of NOx emissions from biodiesel is completely settled yet. I just wanted to ask ARB for some clarification. I think there's still some outstanding research.

MR. KITOWSKI: Yes, I think that is still an issue that is a concern to us moving forward.

MR. FULKS: If I could clarify my

comments on that, Bonnie. What I was referring to was not fatty acid methyl ester biodiesel, which is traditional soy-based biodiesel. There is not any number coming out of ARB that indicates that is a NOx solution. I am talking about next generation renewable diesel fuel that is hydro-treated and refined. There is unquestionable NOx reductions from that fuel and that is verified by the Air Resources Board. There's two separate categories of so-called biodiesel fuel, phane biodiesel and non-ester renewable diesel. The non-ester renewable diesel has indisputable NOx reduction properties.

PRESIDING MEMBER BOYD: There is a Chris Casado on the phone who has indicated that they have a real time problem. Are you there?

MR. CASADO: Are you there? Yes, thank you.

PRESIDING MEMBER BOYD: Yes.

MR. CASADO: Are you there?

PRESIDING MEMBER BOYD: Yes, go ahead.

MR. CASADO: I'm sorry, I'm not sure if you can hear me okay but I am actually calling you from outside the country. Thank you for accepting the call, I'll be brief.

I just wanted to -- I have a quick comment in terms of I am from Cal Produce Sales Corporation and also CP Biofuels, which is a company that is developing a small cellulosic facility in the Central Valley. We are looking to use agricultural wood waste, locally sourced, as the primary feedstock.

And we have been working on this project the last four to six months and I just wanted to bring it up to the Commissioners' attention. We have had a chance to speak with the staff over the last, you know, four to six months as we have been developing this project to bring them up to speed in our project.

And in terms of a couple of comments that were made. Once is, you know, near-term projects. We believe this project is a relatively near-term project. Our time line has us applying for matching supporting funds through the AB 118 program here. We are backed by a local investor base of agricultural businesses located in the Central Valley. And we anticipate like a six month project development cycle where we would be targeting to apply for the federal loan guarantee program, the assistance program, at the end of --

in the fall of 2009. And from there we'd anticipate roughly a 12 month construction cycle.

We are talking about a small-scale cellulosic ethanol facility that would produce both -- I think it was Steve Kaffka who mentioned that it would be an integrated biorefinery. So while ethanol is one of our primary products we would also be looking to produce other valuable co-products.

In terms of the scale we would look to locally source our wood waste. We are talking with a number of organizations, some of the local producer groups as well as the San Joaquin Valley Air Pollution Control District to understand, you know, the restrictions that will be coming on line for burning bans. So we can tap into some of their waste streams.

The whole point of just bringing this comment up is we just wanted to say hey, we are a project out there. We believe we are a viable project. And we just wanted to, hey, throw our hat in the ring and say, you know, we believe there's strong potential and strong opportunities here in the Central Valley. And there are companies out there like ours that are locally

based that are putting projects together and hoping to move this industry and the causes behind this forward.

ASSOCIATE MEMBER DOUGLAS: Thank you. The next card we have -- Are there questions?

The next card we have is from John Mandella.

MR. MANDELLA: Good afternoon. My name is John Mandella and I represent Alternative PowerTrain Technology and also a company called Brilliance AutoCam Automotive Group.

Within the last five years we have spent close to a billion dollars. We spent $100 million for an extended range hybrid plug-in vehicle that we will be manufacturing at the Port of San Francisco the first part of next year. This unit will probably retail somewhere between $28,000 and $30,000. It will be on display at the SAE Show, at the Detroit Auto Show April 23 of this year.

The SUV will be capable of 100 miles per gallon. The propulsion will be electric. It will have lithium ion batteries. The vehicle will use an internal combustion engine to charge the batteries. This unit, you will be capable of driving from San Francisco to Los Angeles and

every 400 miles put in four gallons of gas.

Some of the people that have been speaking today, the last time I saw them was August 6, 2006 when we were called to speak before former Secretary of Commerce Carlos Gutierrez under Mr. Bush's administration as well as former Speaker of the House Dennis Hastert, as well as Congressman Pombo, who at that time was the Congressman from the 11th District.

I just walked in off the street to be honest with you. I didn't know this thing was going on and I am not quite prepared. But other than the fact that I could also assure you that we were at the Detroit Auto Show in April right next to General Motors. And we have invested close to $800 million on prime, European designed vehicles, a fleet of four, that get EPA rated gas mileage based upon a four cylinder turbo engine family that we developed between 36 and 42 miles per gallon. And the reason I'm here, I just wanted to meet everybody and I would like the opportunity to present before staff and engineering this program that we hope to put the factory in California.

ASSOCIATE MEMBER DOUGLAS: Thank you for coming in.

MR. MANDELLA: You bet.

ASSOCIATE MEMBER DOUGLAS: The next blue card I have is from Catherine Dunwoody

MS. DUNWOODY: Thank you very much, Commissioner and members of the Advisory Board. I want to also commend the staff on putting together a really great Investment Plan. I especially want to support the funding level that you have increased for hydrogen; it is a very important element of the plan.

As many of you know, and hopefully you have read, the California Fuel Cell Partnership, which I am representing today, has prepared an action plan, which is a very specific plan on how to move forward into the early commercial market for hydrogen fuel cell vehicles. It outlines the vehicles that are projected to be deployed in California based on the automakers' survey that we conducted at the beginning of this year as well as the numbers of fueling stations, the communities that our automaker members have identified as the priority early market communities where those investments should be made, the costs associated with deploying those hydrogen stations, the projected government/private investment

recommendations. And I am very pleased to see that the Energy Commission has taken a look at that and followed-through with a bold investment for hydrogen.

I wanted to also just take an opportunity to respond to some of the comments that Mr. Coleman had made earlier as well as some of the, you know, comments around the room with regard to, you know, why invest in hydrogen today.

I think the number one reason, of course, is we know now the vehicles are coming. And it is not just the ZEV mandate, it is also individual automaker plans to begin moving into this early market. Based on the survey that we conducted in January of this year the automakers project 4300 fuel cell vehicles in California by 2014, up to 60 fuel cell buses.

And that number is just the beginning. By 2017 we could have almost 50,000 vehicles here in California, which actually is a number that exceeds the current ZEV mandate. So clearly the automakers are very enthusiastic about this technology and see it as a real viable solution for a commercially viable technology in the future.

And that is why they have invested so much money in this hydrogen fuel cell technology. As we heard earlier from Mr. Fulks, Daimler is not the only one that has invested in the billions now in this technology. We have heard of similar investments from the other automakers as well.

One of the points that Mr. Coleman had brought up was with regard to the cost of the vehicles. I think it is very important to look at costs in terms of mass production costs. And I would like to refer specifically to a study that has really gotten a lot of press from MIT. It's Kromer and Heywood's study. They have done a lot of work analyzing advanced transportation technology costs. And what they did is looked at what the incremental costs of various vehicle technologies would be in 2030 and compared it to other technologies.

For example, with a fuel cell vehicle they estimate the incremental cost for that vehicle in 2030 to be about $3600. By comparison they estimate the cost of a battery electric vehicle to be about $6900. And a plug-in hybrid vehicle with a 30 mile range to be about $3700, with a 10 mile range to be about $2700.

So obviously there's a lot of assumptions made in any of these studies but I would really encourage you to look at that as a source of information when you are looking at costs of advanced technologies in the future. All new technologies are expensive so it is really not appropriate to be talking about costs of individual vehicles when they are made at low volume production levels.

So clearly the automakers see the fuel cell vehicle as having significant consumer appeal. Just anecdotally, General Motors' Project Driveway as of September of last year had 70,000 people signed up to participate. Honda has noted that over 50,000 customers, potential customers have expressed interest in the FCX Clarity. So much so that there's news reports that their website had crashed from so many people being interested in driving those cars. And I am sure that many other advanced technology vehicles, whether they are plug-in hybrids or battery electrics or other fuels have experienced similar consumer demand for these upcoming technologies.

But as far as proof that customers will buy these vehicles. We are just not going to know

that until we have a fully functioning early market demonstration of both the vehicle technology and the fueling systems, whether it's fuel cell vehicles and hydrogen or battery EVs and charging stations or any other vehicle/fuel combination you want to look at. And that is what the California Fuel Cell Partnership has proposed in this action plan is to do just that in key early market communities within California.

The automakers have clearly stated that they are building vehicles. And the question is, will they place them here in California, will they place them in Germany, in Japan, in Canada and other parts of the world that are also eager to have this new technology.

And I would like to commend the California Energy Commission for taking the bold step of saying, we believe this technology is important and we are going to make this investment here in California. Definitely encourage working together to get some federal support for this technology as well.

As Mr. Fulks mentioned, $40 million is a great start. Our action plan identifies $52 million to support all the needs in California

from a government standpoint over the next two years and hopefully we can get some of that as well from federal government sources.

So thank you for the opportunity to comment. I'd be glad to answer any questions.

PRESIDING MEMBER BOYD: Thank you, Catherine. Any comments or questions?

MR. COLEMAN: Can I make a comment here?

PRESIDING MEMBER BOYD: Mr. Coleman, Will.

MR. COLEMAN: So I have clearly touched on some sensitive topics in talking about hydrogen. And I don't mean to say that hydrogen is not something that we should be pursuing and pursuing with equal vigor that we are the other programs. But I do want to touch on two things and one is what Mr. Fulks pointed out, which is about private investment.

And I should clarify that what I was referring to in terms of private investment is the private investment community. So if you look at the trends of investment in fuel cells or hydrogen infrastructure or anything else from the private sector, not including the large oil and gas industry or not including the OEMs. What you have

seen is a massive decline in early-stage investment.

There was a real peak early on when there was a fuel cell partnership, when there was massive R&D investment coming from the federal government and you saw early excitement around that space. That's tailed off because of a sense that there's big, big infrastructure challenges there. So that's what I was referring to before.

I think a lot of capital has been sunk into fuel cell vehicles. I think the question is, is this the place to prioritize fuel cells, in this particular program, or hydrogen in this particular program. And what I was pointing out there is that when you are talking about a 4X comparative investment in hydrogen as compared to say biofuels, it is an interesting priority.

And when you look at what that's going to, it's going to 11 stations and you are talking about 4,000 vehicles being available in 2015. Currently you have over 400,000 vehicles, flex-fuel vehicles available in California that can run on biofuels. And there are biofuels out there that have the equivalent carbon footprint as the best in class hydrogen.

So I think the question becomes, how do we set these terms so that we are achieving the most possible reductions for the least possible dollars? And the question I have is, is this the forum to be spending $40 million on fuel cells or should we be doing other initiatives, including some that have already been done in the state of California and bolstering those through additional R&D? So those are the kinds of questions I would ask in terms of where the fuel cell partnership is oriented and what kinds of investments we should be making.

MS. DUNWOODY: With regard to your first point. I think one thing to look carefully at is with regard to the amount of investment that shifted to the automakers on fuel cell technology. When we saw fuel cell vehicles really starting off, sort of more in the science experiment phase way back ten years ago, 15 years ago, to the demonstration phase, a lot of the technology development was done outside of the auto companies. The trend over the years has been for them to bring in the fuel cell development in-house, so you may not be seeing the kinds of investments, the nature of the investments has

changed over time because they view that as a core competency within their company that they are then developing internally.

With regard to, you know, the appropriateness of spending California dollars here. I think the other important point to look at is, you know, where else is the funding coming from. Biofuels has a tremendous amount of funding from the federal government.

Hydrogen certainly has enjoyed investments with regard to research and development funding. But we are now at the point where we are ready for deployment. We are ready to get into the early commercial market. And the federal government has pointed us under the Recovery Act funding to Clean Cities for funding for infrastructure for hydrogen. You know, with all the demands on Clean Cities funding and all the folks around the table who are looking at that funding for other alternative fuels, you know, the federal funding may fall short on hydrogen.

So I think even more important for California to step forward and say that this is a priority for us. We have the ZEV regulation. We are looking to 2050 goals for reducing greenhouse

gas emissions. And, you know, hydrogen is a very important technology in order to get to those goals. So it is an important statement. I think California makes a bold policy statement by supporting this technology.

MR. KITOWSKI: Can I ask a follow-up?

PRESIDING MEMBER BOYD: Sure Jack.

MR. KITOWSKI: A follow-up question, Catherine. As you mentioned, the 2050 goals are California's goals and so hydrogen is a key part of achieving those goals. My understanding, and I think you know this better than I so I was going to ask if you could clarify. The 2050 goals have hydrogen in there as full implementation. That is, they are integrated fully into the fleet. Can you talk a little bit on how you back that off, 15 years worth of fleet off of 2050 and then, you know, smaller production, Prius levels and smaller and smaller to where we are today.

MS. DUNWOODY: Sure. When you are looking at 2050 for any advanced technology, regardless of whether it's fuel cells or anything else, you have a technology that can achieve the 80 percent emission reduction or greater goal, you know. By 2030 you pretty much have to have that

in every vehicle sold because it takes 20 years to turn over the vehicle fleet. So we are really talking about 2030 as the target for fully commercialized technology in every vehicle sold.

So back up another ten years to 2020 to have a, you know, significant number of commercially viable technologies in selected vehicle models. Because as we all know, you know, the car companies make a broad variety of vehicle models. And whatever technology it is has to be applicable to, you know, a good portion of those in order to have a significant impact down the road and have significant consumer appeal. So now we are at 2020.

So backing up another, say ten years, you know, you really need to prove out those early commercial markets in the 2010 to 2012, 2014 time frames in order to be able to move to that technology by 2020.

So people think 2050 is a long ways away. But when you are talking about turning over a vehicle fleet, proving out a brand new technology, whether it's fuel cell vehicles or plug-in hybrids or other advanced biofuels or any of these technologies that we believe can get us

toward the 2050 goal, it's going to take time to do that. And, you know, I fully believe we need to invest in all of these options.

People tend to think of hydrogen as being much farther out there than other technologies. And, you know, I am here to tell you today we are ready to get started, we are ready to move into that early market. There are car companies who have their production lines ready and need places to put the vehicles where there is customer-friendly, easily accessible retail-like hydrogen fueling infrastructure. And that's what we need to do here in California.

PRESIDING MEMBER BOYD: Thank you, Catherine. I think that's all the questions.

MS. DUNWOODY: Thank you.

PRESIDING MEMBER BOYD: Danielle Fugere, Friends of the Earth.

MS. FUGERE: Good afternoon. I would like to start with echoing everybody else's thanks for the substantial work that has been on this plan. I know it has been a long, hard process so we appreciate that.

We appreciate the greater discussion of sustainability also and I look forward to working

next or this week on that issue.

Also we appreciate the increase in funding for electric vehicle technologies. We believe this funding is merited. And as the auto makers line up to bring this technology to the fore and the federal funding kicks in I think that we will see an acceleration in this technology.

Also I am glad to hear that the funding categories are not set in stone because I was not exactly sure, for instance, it did not seem like there were funds for R&D and demonstration of light-duty vehicles. And I think that there might be projects that are applicable in that category.

Also we believe that funding for consumer metering, for instance, is important. Because as consumers go out to purchase plug-in vehicles and use them that may be a barrier to their purchase if you are looking at $2,000 or $3,000 for in-the-home metering.

Recently one issue that has come up with regard to EV infrastructure is the need to ensure that the public has as wide as access as possible to charging infrastructure. So a number of stakeholders got together to discuss this issue, including businesses that will be providing that

infrastructure.

And all believe it would be helpful for CEC to assist in creating a universal payment structure which would look like a key fob or an RFID tag system similar to what we have the FasTrak pass. So that even if a private company has put in infrastructure, anybody who has an electric vehicle or a plug-in hybrid vehicle could go use that system because they have got their fast pass in effect.

And that's something that would probably need to be done by an entity like CEC. Because there's a lot of individualized companies but we want anybody who has one of these cars to be able to access the infrastructure, especially if public money has been put into the placement and building of that infrastructure. I think that's it.

Also I had a question about how the CEC -- I'm glad to hear that the CEC is working on obtaining stimulus funds but it was a little bit unclear to me how that process would work, especially since some of the first deadlines for the DOE funding is in early May. And that doesn't seem to match with the CEC time line. So I don't know if we could get any greater clarity on that

issue or I can just talk to staff afterwards. Thank you.

PRESIDING MEMBER BOYD: I'd suggest the latter. We are racing desperately to keep up with the feds or to get ahead of the feds on the stimulus. It's frankly important to hold this plan out in front of them --

MS. FUGERE: Absolutely.

PRESIDING MEMBER BOYD: -- as part of the magnet that might draw money to California.

MS. FUGERE: Okay, great. Thank you.

PRESIDING MEMBER BOYD: Any questions for Danielle? Bonnie.

MS. HOLMES-GEN: Just a comment I think. There's been a couple of issues brought up about charging infrastructure. One, the need for a standard for charging I think is very important as well as Danielle's point about public access for charging infrastructure. And I just, I think there's flexibility in here to address those issues but I just wanted to see if that is envisioned through part of this plan.

PRESIDING MEMBER BOYD: Public charging access?

MS. HOLMES-GEN: What Danielle was

talking about.

PRESIDING MEMBER BOYD: The metering.

MS. HOLMES-GEN: The metering. And the idea of trying to figure out a mechanism that the public could have broader -- the users of electric vehicles could have broader access to charging infrastructure.

MS. FUGERE: Yes. So the idea is just that right now you can drive into any gas station and pull your credit card out and have access to the fuel at that station. So we would envision and hope that we could create something that was similar for electric vehicle infrastructure.

And it just, you know. The more we talk about it the more it became clear that it is probably useful to have an entity, a government entity help set up that system since so many different companies will be participating. And the fact that these private companies are interested in that I think is useful and helpful.

PRESIDING MEMBER BOYD: That's a good point. We have talked about it and we are also looking at the private sector, utilities public and private, to maybe step up to the plate somewhat on that as well. I don't see Mike racing

to the microphone to say anything more so we'll let it go at that. Okay, thank you, Danielle.

Richard Schorske, Climate director, Marin Climate Energy Partnership.

MR. SCHORSKE: Hello Commissioners. I am Richard Schorske. I am the climate action director with the Marin Climate and Energy Partnership. We are a coalition of all the local governments and the County of Marin and local public agencies. I am also here in part as the coordinator of advocacy and funding on the part of the regional electric vehicle collaborative that is headed up by the City of San Francisco and related entities. I wanted to address a few issues in the draft allocation starting with a quick note with regard to balancing the longer time frames to the shorter time frames, vis-…-vis the GHG reduction imperative.

As many of you are aware, if you are following the climate science, the IPCC director, Dr. Rajendra Pachauri, has said that what we do in the next ten years is absolutely critical with respect to whether or not we pass the two degrees centigrade threshold in our global warming, which would almost certainly lead to the catastrophic

loss of ice sheets and perhaps methane natural feedbacks as well related to the melting of the tundra.

This is actually highly relevant to this plan insofar as California is in a position to really drive the adoption of some of the most efficacious alt-vehicle technologies, especially EVs, in terms of their short-run impact.

And I wanted to suggest the possibility of looking at a couple of these metrics, or rather developing a couple of metrics that might be relevant to your plan. And doing so, frankly, before the final allocations are made. Right now there's substantial investments being proposed in advance of these metrics being developed, which seems somewhat problematic.

If we look at the -- First of all there are some assumptions with regard to EV deployment that I think are worth a second look. In the plan on page 12 and 13 you suggest that electric vehicles are currently more expensive than convention petroleum fueled vehicles and existing electric charging infrastructure is inadequate to support electric vehicles on a commercial basis.

Now certainly both those statements have

been true to the present time. However, if you are following the OEMs' progress, I was just driving the Nissan EV prototype a couple of days ago in San Francisco. They are promising 2010 deployment of a vehicle in the $20,000 to $30,000 range. If you subtract the federal tax credit and the proposed California credit, we are looking at almost half of that $25,000 cost so a vehicle in the $12,000 to $15,000 range. A hundred mile all-electric range with four-doors, sort of similar to a Nissan Sentra. So that is a very, very cost-attractive vehicle and they are talking about commercial scale deployments in the 2010 to 2012 time frame.

However, the issue of the EV charging stations then becomes a key driver. I suggest that the proposed allocations between the hydrogen fueling infrastructure and the EV infrastructure be reexamined and suggest a metrics on that. Based on the analysis in the plan there is a projection of EV deployment of 50,000 to 2013.

That may well be conservative, who knows, it depends on how quickly some of these key vehicles like the Volt, the Nissan EV and the Prius plug-in come to market. But as of now they

are all talking still about the 2011 time frame for those. By contrast the hydrogen roughly speaking, extrapolating from your numbers to 2013, we would be looking at 5,000 vehicles.

The charging station costs for these two different technologies, the EV charging station cost that you report is $4500 per charge station, $3.6 million per charge station for the hydrogen. If you look at the subsidy per vehicle that is represented by the proposed charge station investments, we are talking nine cents per vehicle for the charging stations that are proposed versus $720 per vehicle for the charging stations proposed on the hydrogen side. That's a pretty dramatic distinction.

However, if you go to the -- Obviously the big distinction is the hydrogen fuel would be -- the hydrogen vehicle would be fueled almost, you know, within a few minutes, versus the hours on the lower power EV stations. However, the cost for the high-voltage 480 volt EV charging stations for which a specification is due in the next year from SAE, that brings the charging down to minutes. The Nissan folks estimate twenty-some minutes for a full charge and half of that time

for a half charge on their 100 mile range capability, bringing 50 miles of additional range into a few minutes. However, the per station cost jumps from the $4500 range to about $20,000 I'm told for the 480 volt high-power charger, off-board charger.

So just to look at the program subsidy now on these, on these two fueling options for these two vehicle types. Currently we are looking at $240 per vehicle subsidy for the EV versus $8,000 subsidy per vehicle for the hydrogen based on the full deployments proposed for 2013.

I would suggest that if you were to change the, shift $20 million from the hydrogen fueling station infrastructure over to the EV fueling station infrastructure, you would reduce from approximately three to eight hours the charge time on a 240 volt or 110 volt station to the minutes, 10 to 25 minutes or so for the higher cost 480 volt station.

This is a massive distinction, obviously, in the number of vehicles that can be serviced in a given day per station and the consumer convenience on the infrastructure as a whole. And $20 million would effectively increase

by 1,000 the number of stations. You would take 1,000 of those 4500 stations that are proposed for EVs under your allocation. A thousand of those could become the higher-power, few minute recharge stations.

This is a near-term technology. Essentially it's proven. There are vehicles that are in the pipeline that are consumer priced vehicles. Mass market vehicles that are known to be rechargeable through this technology. It does not require land beyond what municipalities and private parking providers already have access to. It's an in the box solution and we think that this could be an enormous further incentive for EV deployment throughout California and especially in those regions like the Bay Area that are looking to become centers of EV deployment in the state.

So thank you for considering a serious reallocation from the hydrogen station infrastructure to this more convenient, near-term and GHG impactful proposal.

PRESIDING MEMBER BOYD: Thank you Richard. Any questions of Richard? Thank you.

Felix Oduyemi, SoCal Edison, Cal ETC representative. And how bad did I do on your

name, Felix?

MR. ODUYEMI: You did excellent, you did very well. I will be very brief. It looks like the previous speaker actually did such a great job that maybe Dave Modisette, who is the person I am actually representing today. I am not here to speak for Southern California Edison, I am speaking for California Electric Transportation Coalition. Dave is not able to be here today.

First I would like to thank staff. I mean, I was here at the beginning of this process and it looked like the first draft that was produced really hit a raw nerve with almost everybody in the room. So I am very happy that today I see a very different reaction. Staff did a marvelous job. I am glad that they were very sensitive to comments that were provided. They have incorporated most of these comments. And we look forward to working with you as you finally adopt this plan.

I have seven specific recommendations. Actually Dave has seven specific recommendations. The first one has to do with the development of charging infrastructure. Yes, we did allocate $12 million to charging infrastructure. But the

entire fund is dedicated to updating the existing 3,000 units and then adding an additional 2,000 for public fleets. And Dave wants an interpretation of that. Does that public fleet mean at public locations like state government, local governments? Or is public fleet in this instance just public access charging facilities?

And when you look at the numbers, the 5,000 units would translate to about $2400 a unit. We did not make any provisions for home-based charging or multi-family unit charging, nothing for workplace charging facilities. So we would like to have opportunities to access funds for those if needed, especially since you are going to have some vehicles deployed, we believe in the very near term.

The second one has to do with the light-duty vehicle category. The whole focus in that section is on medium- or heavy-duty incentives. We did not see any type of support for light-duty vehicles. And I do understand that yes, ARB has funding available for battery electric vehicles, I believe to the tune of $5,000 incentives.

But for demonstration of these projects -- of these products. Particularly we have some

of our customers, Edison, PG&E as well as San Diego, have different demonstration programs proposed by Nissan, by General Motors, by Ford for light-duty vehicles. Does this mean then that these demonstration programs will not benefit from this funding source? We would like that item to be considered and opportunities granted for light-duty vehicle demonstration programs to receive funding from AB 118.

The third item has to do with non-road deployment applications. We made reference specifically to truck stop electrification as well as ports-related activities. But in the main body of the document the table listed just those two items. I believe the table will be on page 16. But in the body of the document you made references to other non-road applications. We are assuming that all those other non-road applications will also qualify for funding and not just truck stop electrification projects.

We have already addressed the issue of coordination with federal stimulus funding. If you have $176 million and we can go after $176 million from the $400 million part for electric transportation, for example, that would be a very

good use of the funds. But electric propulsion systems will not get the entire part. But at least between hydrogen and electricity we have $56 million. And if we can access $56 million from the $400 million using this fund, then that will be a very good beginning. And I am very pleased that both Commissioners intend to make that happen.

We made recommendations in the past that this body should allocate money to support the advanced battery consortiums and we did not see any investment towards that recommendation. We would still like to see some money put aside for the CEC to become involved with the advanced battery consortiums.

And of course we support the allocation dedicated to manufacturing facilities and equipment. We like that recommendation a lot.

Lastly we would like to comment that if we are going to support any type of retrofit vehicles, those vehicles must be consistent with what is required for safety or they must meet all safety-related requirements. Without that we pose the danger of providing incentives for retrofitted vehicles at the expense of OEM produced vehicles.

We believe that the playing field should be even. We should not be providing more incentives to support retrofit vehicles than are produced by original equipment manufacturers.

We thank you for your time and we look forward to working with you.

PRESIDING MEMBER BOYD: Thank you, Felix. Any questions?

MS. HOLMES-GEN: No. But can I just ask, just for a time check, how many more cards --

PRESIDING MEMBER BOYD: That's it.

MS. HOLMES-GEN: One. Okay, thank you.

PRESIDING MEMBER BOYD: So far. Jeanne Trombley, Plug In America. It's my last card so I think it's the last speaker.

MR. SMITH: Commissioner, I'm told there's -- I'm sorry to interrupt. There's two people on-line also.

PRESIDING MEMBER BOYD: All right. I'll leave it to you to call on them since I have no names. Yes.

MS. TROMBLEY: Hi and thank you. I'm Jeanne Trombley with Plug In America. And I would also like to thank you on behalf of our 20,000 e-mail supporters who are very keen on driving an

electric vehicle as soon as possible. These are people that have really asked us to communicate with the CEC the need to boost the funding categories with electric drive. And we want to thank you for doing that and following our recommendations from the draft.

You know, it's clear that the folks, the 20,000 people who are waiting for their electric cars who are in our database know that all you have to do is plug in at night and you are actually getting some of the least expensive fuel on the planet.

With that, you know there has been a lot of discussion here about infrastructure. I mean, that is really how consumers understand it who understand the simplicity of this. But with that in mind, there is a lot of technology coming down the pipeline for very rapid charging. So we would like you on page 43 of the Investment Plan to include in your Standards and Certification section some consideration for plug-in electric drive there.

Because Plug In America has convened a group of the start-up charging companies. And they have all gotten together and they have

started discussing the importance of inter-operability. So you don't have one car coming to try to charge with one plug and not being able to. So that is already on the table so that's important. But we would like to see -- Plug In America will be submitting formal written comments on how we believe that the electric drive should be included in the Standards section of the plan.

And then last but not least, I do believe that the $1 million for public education is not going to do it. It is not going to cut it considering we are talking about how many different fuel types here? We are talking about biofuels and ethanol and natural gas, plug-in electric drive, hydrogen. It just seems that that's got to be increased, that $1 million allocated for public education.

Thank you very much. I told you I'd be brief.

PRESIDING MEMBER BOYD: Thank you. I must confess it was only recently that I was introduced to the fact that the plug-in infrastructure wasn't resolved. Having lived with Jan Sharpless through the inductive paddle plug versus the conductive plug, I thought we had gone

beyond that. But recently I was introduced to the five-pin plug versus the seven-pin plug controversy that I do hope gets settled soon. And maybe we will have to step into that or Jack can resolve it for us, I don't know.

Anyway, enough said. Mike, you said there's folks on the phone.

MR. SMITH: Yes, two. But I would first like to ask Ms. Trombley, I believe it was.

MS. TROMBLEY: Yes.

MR. SMITH: In submitting the comments if you could also, if you could take into account the issue that Mr. Fulks raised about a European standard, American standard, the Asian standard, and how this would play into a standard certification of California.

MS. TROMBLEY: Our group has -- I'll submit it.

MR. SMITH: Yes, just as part of the written comments.

On the line we have two people. Mr. Felix Kramer, are you still with us?

MR. KRAMER: Yes I am.

MR. SMITH: Go ahead.

MR. KRAMER: Thank you very much. Thank

you Commissioners and the advisory board. I am Felix Kramer. I am the founder of the California Cars Initiative. We are a nonprofit organization doing advocacy and working with many for-profit companies. I have a comment and a question or clarification.

My comment: I think this is a good start and it is getting better. I do want to state for the record and for your consideration that the education fund is low. I think that case has been pretty well made. And I want to echo some of Will Coleman and other people's comments.

I think plug-in vehicle advocates have not yet effectively enough made the case that the allocation percentages should be weighed more heavily for electric technologies as the solution that can have the nearest term, low greenhouse gas impact. There are a number of factors including, you know, recently developing situations including the near-term federal programs incentivizing with $7500 tax credits for up to 200,000 vehicles per OEM that are rapidly accelerating deployment commitments. So we have eight major OEMs committing. And then the greenhouse gas impacts and the calculations on that compared to other

solutions and the green collar jobs. All these things are increasingly compelling.

And not to excuse the fact that I don't think we have made the case well enough but relative to other stakeholders, plug-in advocates are kind of a different operation. We are a broad and partly grassroots coalition. And with the exception of CalETC and the utilities we are less well-organized and less well-funded. But I hope we will be able to do a better job going forward in making the case.

On my particular question or clarification. In terms of the medium- and heavy-duty vehicle $10 million program. There is a new option that is really barely on the radar and it is facing some similar skepticism that greeted the first plug-in hybrid conversions, which is to convert heavy-duty vehicles, well medium- to heavy-duty.

Pickups and SUVs is what Intel's former CEO Andy Grove talks about, converting ICE vehicles to plug-in. And we think that this is going to be very compelling and ready to apply for funds. Several new companies are getting started. There are already prototypes of an all-EV Ford

Ranger and a PHEV Ford F-150.

And we are about to release an analysis about the two big reasons to do this. The first is an issue that has been raised repeatedly today, which is we need some new alternatives, some way to get market penetration rapidly enough to make a difference quickly enough. New plug-in vehicles are not going to do it. And converting existing vehicles, especially the ones that are using the most fuel, is a real option. We think it is a business, a realistic business and technical option.

And the second is something that really hasn't been considered very much. Which is the embedded energy in existing vehicles. And in that case conversion can be a valuable alternative in some cases to scrappage.

So my question really is, would programs to purchase prototypes, analyze benefits and fund conversions of large ICE vehicles be eligible under that section on page 15 about heavy-duty vehicles? And if not is it too late to consider adding a subcategory to electric drive to fund the conversions and retrofits for large, gas guzzler passenger and truck vehicles?

MR. SMITH: Well that allocation was targeted at the medium- and heavy-duty classes and not light-duty. But that is something that, you know, the Commissioners could certainly consider in finalizing this document.

MR. KRAMER: Thank you. I hope we will be making sufficient waves so you will be aware of these options coming on to the marketplace. Or not onto the marketplace but actually becoming a viable option to consider in the next few months.

PRESIDING MEMBER BOYD: Thank you, Felix.

MR. KRAMER: Thank you.

PRESIDING MEMBER BOYD: Someone else, Mike?

MR. SMITH: Fred Wellons. Mr. Wellons, are you still with us?

MR. WELLONS: Hello?

MR. SMITH: Mr. Wellons?

MR. WELLONS: Yes.

MR. SMITH: Hi. I'm told you have a question that you want read.

MR. WELLONS: Yes sir. Actually I'm a member of California Biodiesel Alliance and they knew I was going to be sitting in by WebEx today.

And the question that they have is how actually the Energy Commission came up with looking at the California GREET model for renewable diesel based on recycled feedstocks made in California and then biodiesel made in California and considering that we expect some CARB approval of some NOx additives through the testing, multimedia testing that is going on now.

I guess the CBA was interested in whether, some explanation of why some of the older technologies that don't get the same greenhouse gas reductions, especially if you look at it on a CEC or AB 118 per dollar spent, why something like natural gas would get $43 million and then the biodiesel would get like $6 million. A long, involved question but I hope that that came across.

MR. SMITH: In making this allocation the premise was -- in terms of the biodiesel versus the natural gas allocation the premise was that the Committee wanted to see more of a focus on new biodiesel plants that would use waste as feedstocks and therefore the allocation toward, toward those plants.

The allocation for natural gas is made

largely with the eye to -- at least the bulk of the money is going towards an emphasis with ports and school districts. There is an immediate need to address -- Let me just back up. So most of the money is going towards ports and school districts.

Part of the issue with natural gas also is that once these vehicles and infrastructure are, the vehicles are on the road and the infrastructure is in place, as has been mentioned several times today, it provides an avenue for biomethane use, which also provides very deep reductions in greenhouse gases. Probably the deepest so far that CARB has calculated in their Low-Carbon Fuel Standard. So that's the emphasis placed on natural gas vehicles and infrastructure, particularly heavy-duty.

MR. WELLONS: Okay, sounds good. Well thank you.

PRESIDING MEMBER BOYD: Thank you.

Anyone else, Mike?

MR. SMITH: We have one more, Dan Chad. Mr. Chad.

MR. CHAD: Yes, I'm here.

MR. SMITH: You're --

PRESIDING MEMBER BOYD: You're on.

MR. SMITH: You're on.

MR. CHAD: I appreciate that. I have actually two questions. The first was related to the propane buy-down, which at this point has been set at $20,000 per unit. It has been our experience that end users aren't sufficiently motivated by that level of buy-down to put in their own funds to get to the point of purchasing a propane school bus in this case. The MSRC has a $40,000 buy-down which as been used extensively. And my question is, is there any thought to follow the example of that program and increase that buy-down?

MR. SMITH: That is something we can certainly consider with the Commissioners.

MR. CHAD: Okay. The next question I have is, if you guys would have the consideration to allow me to ask another one.

MR. SMITH: Go ahead.

MR. CHAD: Twenty-three million dollars for compressed natural gas. I don't see in the material that has been distributed an explanation of the method for the selection of the percentage of allocation to each category.

PRESIDING MEMBER BOYD: It's the net sum

of all these hearings, all the testimony, so on and so forth. I don't think there is a, and I'm trampling on maybe Mike's answer here, but a mathematical answer to your, your question.

MR. CHAD: So that basically has not been arrived at at this point? Not that you will have a mathematical necessarily at the end but you are still considering all the parameters to determine what that percentage will be?

PRESIDING MEMBER BOYD: Well we are considering everything we have heard to date plus what we are hearing today in our deliberations of what will be the final conclusions.

I mean, your question bridges over to what was going to be one of my closing statements. That I wish I was sitting here with you all trying to allocate $240 million. Which is what was originally anticipated at $120 million a year would be the first two years' worth. But the caprice of the California budget system is we got $75 million for year one and $101 million for year two. So you can appreciate how we are being pulled in multiple directions for lots of good reasons that you are hearing today and not enough money to go around.

So we will continue to try to do the best we can using the best logic we can based on all the advice we have gotten to allocate the money. And immediately go to work on years beyond the first two years as to how to pick up what we left out that we shouldn't have or where markets are driving us that would change our views of the future. I can't do much better than that, frankly.

MR. SMITH: Well let me, let me just add also, Commissioner. What you are describing is the end result. What I think needs to, Mr. Chad, that you need to consider is that over the past close to a year now there's been a great deal of discussion and analysis. The Energy Commission staff has developed this -- you probably heard it referenced earlier today, this 2050 backcasting methodology at the, at the advice of this Advisory Committee.

So much of the foundational work to come to these allocations is based on a good deal of analysis as to the penetration of vehicles and fuels into the marketplace over the next 41 years. What those relative contributions to GHG reduction would be of those fuels and vehicle types in all

categories, light-, medium- and heavy-duty. That is a good, represents a good deal of where we have arrived at today.

Now again as Commissioner Boyd was saying, it then becomes a fine-tuning process by which the Commissioners make their final decisions as to how money is allocated. Based also on where we think money is being invested presently, both publicly and privately. So where we are at today with this last Advisory Committee meeting is truly the end game but there's been considerable analysis and work behind these, these relative allocations.

PRESIDING MEMBER BOYD: Thank you, Mike. A better answer than I gave.

MR. CHAD: Thank you.

PRESIDING MEMBER BOYD: All right, anything else on the phone? None.

All right, first I want to thank what is left of the Advisory Committee, which is more than I would have expected at this hour, quite frankly, for toughing it out in what has turned out to be a long day. And for any members on the phone, my thanks for you too. What we should do now is get any additional comments that our Advisory

Committee members might have to sum up their feelings as a result of sitting through the testimony today. If anybody wants to so venture.

MR. KITOWSKI: I'll go, and in the interest of time, very short. It's a well-balanced, good proposal. You did a lot of hard work and we are very appreciative.

PRESIDING MEMBER BOYD: Thank you, Jack.

MR. EMMETT: Ditto.

MS. HOLMES-GEN: This is Bonnie. I would agree. And I would just say that there were some very worthy ideas brought up. But part of our rationale that we have discussed over the preceding months is that we need to focus this money. We want to hit the high priority needs and we want to focus so that we will actually be able to get results out of this money and not be spreading it or potentially just spreading it too thin and not making progress. So I think that the plan has a good balance. And as we move forward maybe we will be able to venture into some other areas but I think it's a good start.

MR. SHEARS: This is John Shears. Again I just want to express my appreciation for the Commissioners and staff and all the hard work and

all the stakeholders too who have been following and offering their very valuable insight into this first run at the program.

I think that we need to recognize that the Energy Commission has a lot of demand placed on them for how to deploy these funds. We are all going to be learning a lot as we move through this program. And I look forward and, you know, encourage everyone to work together as we move forward in the coming year. Thank you.

PRESIDING MEMBER BOYD: Thanks John.

MS. SHARPLESS: Jim, I would agree. I think the staff and the two lead Commissioners in this process have done a herculean job in gathering information and reaching out in talking to partnerships.

And I would just highlight that I think it is well-balanced from the respect of what we know today and that you have indicated that, you know, there's going to be flexibility in the system. I think there's been some interesting ideas that have come in in today's discussion that you all will probably consider as fine-tuning.

But I would also say that the Energy Commission is not the only one driving the boat

here and you have taken that into consideration. That you have put together a plan that complements efforts that are being done by federal, state and local agencies and also in the private sector. And this is a difficult thing to do because it is multi-, multi-, multi-, multi-party.

And so I just, my hat is off to you. I think you are anxious to launch this effort. I think it needs to be launched. I am glad to hear it is going to be brought to the Commission on April 8, which is two days from now, and looking forward to seeing how this plays out.

PRESIDING MEMBER BOYD: Well I am afraid to use the word launch in light of what North Korea did a couple of days ago but nonetheless, thank you.

MS. SHARPLESS: Oh they launched.

PRESIDING MEMBER BOYD: I thank you all. I thank you all for, all the stakeholders it's true, for your time and your indulgence and your contributions. I think everybody has learned a lot, including how complicated this is. How many potential strategies, technologies, fuel types there are and how this little bit of money we have doesn't go a very long way.

We add to it what the ARB has, and as indicated, we have worked closely in trying to balance what they do versus what we can do and what the law provides they can or can't do and what we can or can't do, including the provision that we seriously consider plug-in hybrid conversions, in the law. In answer to Mr. Fulks thinking it's -- I don't know if you said, stupid, Tom?

MR. FULKS: Dumb.

PRESIDING MEMBER BOYD: Dumb, okay. In any event. Well I thank you all and I'll adjourn this gathering.

(Whereupon, at 1:47 p.m., the Advisory Committee Meeting was adjourned.)

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CERTIFICATE OF REPORTER

I, JOHN COTA, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Advisory Committee Meeting; that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said meeting, nor in any way interested in outcome of said meeting.

IN WITNESS WHEREOF, I have hereunto set my hand this 10th day of April, 2009.